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ABSTRACT

This guide is one of a series of three units which include guides for K-6, 7-12 and adult education. This one which focuses on K-6 discusses the following topics: (1) why alcohol education is important; (2) what should be taught about alcohol; and (3) how alcohol education should be taught. The guide also includes supplementary content information for the teacher as well as a resource list for potential use by the teacher. (CKJ)

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ALCOHOL EDUCATION

A TEACHER'S CURRICULUM GUIDE
FOR
GRADES K-6

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Drug Education
Albany, New York 12234
1976

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FOREWORD

The abuse of alcohol has only recently been recognized as a major contributor to many physical, psychological and sociological health problems even though it has been a serious issue in our society for generations. At the present time there are an estimated 10 million alcoholics in the U.S., as well as millions of others who abuse alcohol to the extent that it interferes with their ability to function. A review of alcoholic statistics indicates that the use of alcohol is a factor in many crimes and injuries - 50% of fatal automobile accidents, 30% of suicides, 40% of snowmobile accidents, 53% of fire deaths, 64% of homicides, 45% of drownings, 56% of fights and assaults in the home, and 71% of accidental poisonings to mention a few. Can our society be spared a substantial portion of this pain and suffering? The Board of Regents and the staff of the State Education Department believe it can. In an attempt to do so the Department has developed new alcohol education guides -- one each for grades K-6, 7-12, and adult alcohol education.

These new alcohol curriculum guides and teachers' manuals have been designed and prepared to assist school personnel to more effectively combat the alcohol problem through education as a primary prevention vehicle. These materials and approaches used will become more meaningful through cooperation with the resources of various community health-related agencies.

The educational approach should not be didactic but rather it should be student-centered, with each learner being actively involved in the learning process. Such an approach considers the need for individuals to be involved in planning the educational experiences that will effect their respective lives. While there is no simplistic answer to the complex problems of alcohol abuse and alcoholism, emphasis on individual decision making about the use of alcohol holds the greatest promise for alleviating the problem. Over the long run, it is more effective and efficient to prepare an individual to cope with drinking before it becomes a problem than to remedy its destructive effects after they have occurred. It is reasonable to conclude that the cost of developing individual decision-making skills will be more economical than the development of treatment programs in an attempt to restore the health of the alcoholic.

These guides were developed with a recognition of the need for programs which focus on information and attitudes about the use of alcohol resulting in responsible drinking practices. Information alone is not enough, but it does play an essential part in decision making. The development of attitudes and the identification of "behavior norms" play a major part in making responsible decisions. The following represents a few of the behaviors which will promote these responsible decisions:

...respecting an individual's decision about alcohol - either to abstain or to drink responsibly;

...recognizing that drunkenness is neither healthy nor safe;

...understanding one's own reasons for making a decision about the use of alcohol;

...recognizing the health and safety and fun of all by avoiding intoxication and helping others to do the same;

...choosing to avoid the use of alcohol as a way of dealing with one's problems;

...recognizing that social acceptability does not require drinking;

...recognizing and understanding that alcohol is a drug;

...avoiding riding with drivers who are under the influence of alcohol and discouraging them from driving;

...recognizing that one's attitude and behavior affects and influences others, especially children.

In the curricula, a serious attempt has been made to interrelate the efforts of other governmental and voluntary organizations to those of the schools. In so doing education becomes a product of a cooperative effort which involves the school, family, industry, religion, as well as other voluntary and governmental health agencies. The schools can and must conduct an alcohol abuse and alcoholism primary prevention program, not only because it is required by state statute (Chapter 674, 1970) but also because they have the responsibility to contribute to a more stable and productive life for each of their students.

As important as these guides may be, the teacher is the most important factor in the success of an educational program. Although a teacher's guide is provided, the program emphasis on a student-centered approach and cooperation with numerous governmental and voluntary organizations may require in addition the need for a teacher training program. Since this is a new curriculum, at least a minimal orientation for teachers is suggested. School adminstrators are encouraged to arrange regional programs for this purpose.

The staff of the Bureau of Drug Education is available to assist in organizing and conducting such programs. For more information, call (518) 474-1492.

PREFACE

A TEACHER'S CURRICULUM GUIDE - GRADES K THROUGH 6

This Teacher's Curriculum Guide is one of a series of three units. Included in this alcohol education series are a curriculum guide and teacher's guide for grades K through 6, curriculum guide and teacher's guide for grades 7 through 12, and one comprehensive unit for adult education which includes both the curriculum guide and teaching suggestions.

Each unit attempts to build on the previous unit; therefore, the following topics are basic throughout the three units. They are:

TOPIC I: THE NATURE OF ALCOHOL.

TOPIC II: MANY FACTORS INFLUENCE THE USE OF ALCOHOLIC BEVERAGES.

TOPIC III: ALCOHOL AFFECTS PEOPLE IN A VARIETY OF WAYS.

TOPIC IV: RESPONSIBILITY FOR THE CONTROL OF THE USE OF BEVERAGE ALCOHOL RESTS WITH SOCIETY.

TOPIC V: THE RESPONSIBILITY FOR THE TREATMENT OF INDIVIDUALS RESTS WITH SOCIETY.

ACKNOWLEDGEMENTS

Grateful recognition is given to the New York State Department of Mental Hygiene, Division of Alcoholism, and the many school administrators, teachers, and specialists who will help to evalute this material. Their generous cooperation in the development of this publication exemplifies the concern we all share in solving one of today's more complex preblems, the abuse of alcohol in our society.

Grateful appreciation is extended to the Nebraska Department of Education for use of some of their materials on value clarification, the Illinois Office of Education for permission to adapt some of their teaching materials for this publication, and the Instructional Development Unit of the Educational Communications Center of the State University of New York at Albany for their assistance.

Special recognition is extended to the Alcohol Education Research and Writing Committee: Mr. Anthony G. Lento - Chairman of the Committee, Associate Professor of Education and Drug Education Coordinator, State University of New York at Albany; Mr. Donald R. Covell, Drug and Health Coordinator, Scotia-Glenville Central School; Mr. Edward D. Griesemer, Middle School Teacher, Schenectady City Schools; and Miss Nancy Malinowski, Program Assistant, Social Studies Teacher, Shenendehowa School System.

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These materials were developed through a grant from the State University of New York , The State Education Department, The Division of Health and Drug Education Services. The overall supervision of the research, writing and compilation was under Anthony J. DiBenedetto, Chief of the Bureau of Drug Education. Albert E. Bedworth, Associate in Health Education, the Bureau of Health Education, provided valuable consultation with the writing team and was the liaison person from the Division of Health and Drug Education Services.

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-CHAPTER 1-

WHY SHOULD WE TEACH ABOUT ALCOHOL?

WHY SHOULD WE TEACH ABOUT ALCOHOL?

Since drinking is an increasingly accepted pattern, a widespread social and cultural custom, the irresponsible or uncontrolled use of alcoholic beverages presents major problems to society and individuals. Of the 94 million Americans over fifteen years of age who drink, more drink in moderation, without apparent adverse effect, and with the tolerance, if not the sanction, of knowledgeable authorities.

The problem of alcohol abuse is serious and immensely complex. Stringent laws and formal and informal sanctions have failed to prevent (1) the promotion of the misuse of alcoholic beverages, and (2) the abuse of alcohol among teenagers.

The solution is no longer a "for - or - against" controversy. Schools can and should approach alcohol education in the same manner as they do other social problems which affect human beings. Education along with legislation and community action can at <u>least</u> help to develop the healthy attitude that is necessary to meet the demands of today's society.

Any discussion of alcohol poses special difficulties because of the emotional biases regarding the topic. Many critics, for instance, may say that a teacher is actually teaching "How to Drink" rather than presenting factual information for students to make their own decisions concerning the use of alcohol. Conversely, to say that a teacher must teach about the "non-use"of alcohol might conjure up the image of a temperance lecture in the classroom.

As societal restrictions on the use of alcohol lessen, the need for more <u>positive</u> alcohol education in every school in New York State grows accordingly. Personal decisions relating to the use of alcohol will be necessary for every student throughout life, regardless of his or her future occupation or economic status.

It is very important, therefore, that schools recognize the seriousness of the problem of alcohol abuse by making the instructional part of a drug abuse program an integral part of the total curriculum. Coordination of the total program within each school district and school will prevent unnecessary duplication of efforts and materials being presented.

The school years are, indeed, impressionable ones for fifty-two million students who compose a fourth of the nation's total population. These are developmental years when habits are formed: habits which last a lifetime, habits which can uncover or mask the strains and stresses of contemporary life. Many of the habits learned during the school years will be reflected in health and social problems of the future adult years. Do we wait until complex and complicated alcohol-related problems have become chronic afflictions before intervening, or should preventive efforts be started while students are still accessible and most impressionable?

According to 1973 findings by the Select Committee on Crime, "Drug abuse (which includes alcohol) in our schools ranges from serious to epidemic. Yet, with rare exception school authorities were most reluctant to acknowledge the extent of the problem." Regrettably, the policy of most school boards seems to be one of turning away from the problem by refusing to acknowledge the extent to which it exists at the local school level.

Education Law, Section 804 (1952) of New York State requires that students in New York schools receive certain instruction regarding the harmful effects of alcoholic beverages. Students should know what such beverages are, what society thinks of them, and what the implications of their use are. Even more recently the education law, chapter 674 (1970), covers a more comprehensive health education program.

This Teacher's Guide is designed to provide teachers with information on which to base such instruction. It is an attempt to put between covers certain information regarded as essential if the subject is to be approached intelligently and rationally.

In spite of the effort to minimize bias, it is essential to present these underlying assumptions with which most persons are likely to agree. For instance:

1. For most youngsters in most situations, abstinence from alcoholic beverages is more prudent and desirable than indulgence.

2. It must be acknowledged that individual young people will find themselves in situations where they must make their own decisions about indulgence.

3. Youngsters are more likely to make wiser decisions if they know some specifics about alcohol and its sociological, psychological and physiological effects.

The decision to drink or not to drink should be based on knowledge rather than on outside pressures or the advice of friends, and it is an important responsibility of the school to provide both the information and a forum for its free discussion.

Young people also need to develop skills in handling and evaluating information. They need to acquire skills in working together, participating in groups, and in reporting their findings. Educators must also seek to develop desirable attitudes toward an understanding of the more acute social and economic problems related to the excessive or unwise use of alcoholic beverages. These attitudes and appreciations are difficult to teach, but they are extremely important.

A carefully planned program of instruction about alcohol problems integrated into the curriculum areas of health, social studies, science, and driver education would be most effective and desirable. Other areas of the curriculum -- homemaking, industrial arts, and guidance -- may also offer excellent opportunities.

Topics and problems to be studied should be carefully selected to fit the maturity and interest of the students. Knowledge of community attitudes and of the needs of the students should be of paramount importance to the person who intends to teach the unit about alcohol problems.

-CHAPTER II-

WHAT SHOULD WE TEACH ABOUT ALCOHOL?

WHAT SHOULD WE TEACH ABOUT ALCOHOL?

DEVELOPMENTAL TRAITS

The function of the public schools or of any agency of the state is not to make judgments about the moral correctness or incorrectness of alcohol. We can, however, point out that drinking by certain individuals under certain conditions is illegal and that use of alcohol can be dangerous.

One of the major goals of teaching is to reinforce self-directedness. This can be best achieved through an on-going program which provides children with "practice sessions" in decision-making. Instruction about the drinking of beverage alcohol should be planned and conducted to give the student an opportunity to make an intelligent decision concerning alcohol and its use. To do otherwise could be futile since any real behavior relative to drinking will be decided and carried out independently of the school setting. Teachers are being challenged to educate for personal decision-making and must meet that challenge.

The impact of the complex forces during childhood and adolescence which act upon learning is known to teachers. A brief review of the more salient developmental traits as they relate to the K - 6 child seems important.

DEVELOPMENTAL TRAITS OF 5 - 10 YEAR OLDS

GRADES K - 3

1. By the age of 6, the average child has attained 42% of physical adult size while the brain and central nervous system have attained 90% of their size. Of course growth of the child will continue to occur, but the increments will be much smaller.

2. The children of this age group are now beginning and will continue to learn skills for ordinary games. Socialization with peer groups in game situations is important as is socialization in the classroom setting.

3. It is at this time that children begin to formulate and develop conscience, a sense of morality, and a scale of values. These items are well-engrained into the personality of the child by age 11 or 12 and are likely to remain relatively unchanged.

4. The learning of culturally appropriate psychosexual roles begins to take place in earnest during this time period.

5. The achievement of personal independence begins to take place. Children entering school experience a suddenly expanded "world" -- from their home to the neighborhood, then to the community. No longer are they content to remain in their previous world; namely, the home or family.

6. The child will begin to evaluate himself/herself in terms of the school standards and the standards of his or her school peers. Self-concept will be modified from the image set previously by his or her parents and siblings. This receptiveness makes the child amenable to "affective" health education, an occasion perhaps never to be duplicated in later years.

DEVELOPMENTAL TRAITS OF 10 - 12 YEAR OLDS*

Grades 4 - 6

By the time a student reaches the 4th grade, he or she is most likely to:

1. Show an increasing concern for group recognition and approbation.
2. Reject standards of home in favor of those of peer group or clique.
3. Become a member of some secret society or social club.
4. Fluctuate between a need for independence and a need for dependency.
5. Be inconsistent and variable in regard for parents.
6. Be torn between loyalty to home and allegiance to peers.
7. Take good health for granted and become concerned only on those occasions when an illness threatens to interfere with activities.
8. Lack maturity of judgment.
9. Greatly increase interest in facts of all kinds and desire to extend intellectual as well as physical horizons.
10. Be critical of explanations of scientific phenomena, often demand evidence, and be alert to claims of propaganda.

As boys and girls move from their isolated home environment to the varied social environment of the school, there are increased needs for understanding the ability to adjust to changing situations. In addition, they need the skills to make those adjustments. Eventually, the child will be faced with social decisions about his or her use of beverage alcohol. The primary and intermediate children are particularly receptive to learning social skills.

In addition to the cognition surrounding beverage alcohol are the multiple interacting factors which will affect the individual child's relative ability to make alcohol-related decisions.

*Adapted from: TEACHING ABOUT BEVERAGE ALCOHOL, State of Illinois, Department of Public Instruction, p. 40.

SUGGESTED GENERAL CONTENT

Since self-concept development and a general sense of personal worth, as well as an ability to demonstrate basic decision-making skills, are prerequisites to being able to handle complex cognitive areas, the K-3 health education experience ought to prepare the child for personally evaluating the cognition which will ultimately be involved with his or her relative ability to make decisions about beverage alcohol. The most important component of the K-3 alcohol education program must be "practice experiences" in decision-making. With this thought in mind, it is quite probable that the most important kind of alcohol education may take place at the K-3 level without ever mentioning the word "alcohol."

By the end of K-3 grade section, the student will be able to:

1. Compare the attitudes and habits related to the proper use of chemicals.

2. Identify the different types of people they will encounter in their daily lives.

3. Distinguish between sources and people that can or cannot provide reliable information concerning the various chemicals with which the student may come in contact.

4. Recognize the danger involved in the improper use of common household substances.

The 4-6 alcohol education program tends to continue an emphasis upon the affective domain but cognition becomes more dominant than in the K-3 level. The intermediate grade youngster has more basic skills with which to work. Therefore, alcohol education experiences tend to lend themselves easier to the unitizing process. Although concommitant experiences may continue to be the more successful way for a district or individual teacher to implement alcohol education at the intermediate level, the fact that the intermediate child has a greater ability to handle cognition may increase the desirability for developing units in alcohol education.

The intermediate experience in alcohol education is more specific in its cognitive approach. The material and objectives to be achieved by the children can be placed in units more easily than the objectives of the primary level. Even though this is true, the intermediate teacher must continue to be aware of the need for "affective" health education, particularly as it relates to alcohol education.

By the end of the 4th - 6th grade section, the student will be able to:

1. Define the term "alcohol."
2. Identify and suggest reasons for different kinds of behavior.
3. List examples of several needs that can be satisfied by one's behavior.
4. Give examples of alternate behaviors that are directed toward satisfying a need.
5. Suggest ways in which people satisfy needs by drinking beverage alcohol.
6. Describe how people use, misuse, and abuse various substances in order to satisfy certain needs.
7. List reasons why some people can use alcohol while others abuse it.
8. Summarize the positive and negative effects of alcohol on the user.
9. Describe how the use of alcohol by one person may affect others.
10. Give examples of responsibilities assumed by children and adults.
11. Illustrate ways in which accepting responsibility affects others.
12. Discuss how they learn from experiences and deal with mistakes constructively.
13. Differentiate between their responsibilities and the responsibilities of various adults in controlling alcohol use.
14. Discuss how proper supervision of the use of any drug is important during this period.
15. Describe how people should and can help each other when they are faced with problems.

-CHAPTER III-

HOW SHOULD WE TEACH ABOUT ALCOHOL?

HOW SHOULD WE TEACH ABOUT ALCOHOL?

What should students be able to do -- and willing to do -- as a direct result of their school experiences? Stating the purpose of education in terms of societal needs, as reflected in observable behavior, has long been an accepted practice of scholars. It is supported by every major curriculum study in the past two decades, irrespective of the subject matter specialty. Instruction about alcohol should not be, and is not, the exception.

This Teacher's Guide for Alcohol Education, intended to assist schools in developing a curriculum structure compatible with the basic philosophy of education in a democracy, is based upon the following assumptions:*

1. The purpose of general education should be to help the students realize their fullest potentialities and meet civic responsibilities.

2. For clearest definition, goals of general education should be described in terms of performance or behavior competencies, rather than in terms of knowledge.

3. Students should be expected to know how to use what they know and to have the disposition to do so.

4. The scope of general education should be sufficiently broad to provide youth with the kinds of competencies needed to meet life's demands as a person and as a citizen.

The aim of alcohol education, then, emerging from the broader goals of general education, is to help students develop the ability to make intelligent decisions concerning the use of alcohol in everyday situations.

The basic objectives should be:

1. To present scientifically valid information about the physiological, psychological, and socio-economic effects of alcohol.

2. To provide a classroom environment where young people may examine and clarify their own feelings and attitudes about the use of alcohol in view of the diverse public attitudes and practices regarding drinking.

3. To develop a sense of responsibility in the student for his or her own welfare and that of others in regard to the use of alcohol.

* Based on: Will French, *Behavioral Goals of General Education in High School*, Russell Sage Foundation, 1957, pp. 247.

GENERAL METHODS

Participation in a wide range of activities, discussions rather than lectures, and an atmosphere that will encourage trust and promote mutual understanding should be emphasized. Classes should be student- rather than teacher-centered. The class atmosphere should be one of cooperative learning rather than competitive learning. Small group arrangements are recommended. Assumptions that students should be treated as alcoholics or that they need rehabilitation are not justified by any conditions known at this time. Since problems of alcohol abuse are often symptomatic, it is frequently found that discussions lead to exposure of other problem areas. Referrals to other school staff should be made as quickly as possible when needed.

To effectively communicate with students, educators should understand their own attitudes towards alcohol. Encouraging open discussion and direct interaction with students is essential.

Some general suggestions are:

1. Establish a non-authoritarian, non-threatening environment in the classroom which will allow free flow of information and exchange of ideas and feelings. A non-moralizing, non-dogmatic approach to the subject of alcoholism should be employed.

2. Involve students actively in the analysis of printed and audiovisual materials about alcohol.

3. Provide opportunities for frequent teacher-student contacts on a one-to-one basis and for daily encounters with groups of students. Controversial subjects and current problems should be discussed in classes such as social studies (e.g., war, politics, racial situations, alcoholism, urban problems).

4. Provide a room in school for multi-media experiences to be used to maintain open communication. Students might decorate the room and take part in decisions for its use.

5. Use small group techniques extensively, such as
   A. Interaction through a dialogue
   B. Role playing and behavior rehearsals
   C. Buzz sessions
   D. Critical incidents.

6. With caution and advance screening, use personnel from treatment and rehabilitation programs, or other resource persons from all levels of related backgrounds. Also, make visits to appropriate institutions and agencies.

7. Instead of using entire films, think in single concept terms. Show a portion and discuss, letting students participate in open discussions on good and bad aspects.

8. Collect newspaper stories about alcohol. Read in class for biases and discuss.

INAPPROPRIATE APPROACHES

Schools throughout the country have reported the ineffectiveness of crash programs, moralizing, and attempts to frighten students:

> An "all school" program is no way to conduct alcohol education. The normal rules of school are suspended, all classes stop, students assemble, people are invited from the community, and one or two films -- often sensational or lurid and more likely to breed alcohol use than to suppress it -- are shown. "This is why it's dangerous to use alcohol" approach is likely to make many youngsters feel that if they haven't tried alcohol they're missing something. To many young people, the old-time rituals of religion, country, family and school have lost their appeal, and alcohol, drugs, astrology, and youth sub-culture are among the substitutes. Educational emphasis should be on ways of coping with youths' problems rather than on picturing drug users as "depraved" individuals, which has proven to be ineffectual.

Attempts to survey use of alcohol by students often are perceived by students as objects of humor and scorn.

Care should be used in explaining the provisions of law relating to alcohol use.

> Young people delight in pointing out the inconsistencies and hypocrasies in alcohol legislation and enforcement, and while they should be informed of the penalties of alcohol misuse, nothing is to be gained from trying to defend the inconsistencies of alcohol legislation.... With most youths, threats make no impressions. They argue that the adult community commits legal transgressions. Why shouldn't we?

Audio-visual materials used in alcohol education programs are frequently received negatively by students. Therefore, a screening committee, with local students and parents among its members, is advisable.

EFFECTIVE TEACHING METHOD ESSENTIAL

The most promising method at the present time seems to be one that:

A. Establishes aims, goals, purposes
B. Takes into account the level of maturity of the students
C. Is integrated into suitable areas of the existing curriculum
D. Recognizes the psychology of learning
E. Avoids authoritarianism
F. Seeks to establish a friendly, permissive climate in the classroom
G. Makes wide use of supplementary books, periodicals, films, and other audio-visual aids
H. Has the teacher lead and guide, endeavoring always to be objective
I. Allows students to suggest problems, ask questions, and help to determine the course of the study
J. Encourages decision making by students and permits the full participation of all students
K. Has students actively involved in the learning experience.

Such a method is organized around a resource unit. This may be thought of as a reservoir or file of information, resources, ideas, and materials on which each teacher may draw in constructing an actual teaching unit. Such a resource unit is not static; rather, it is a growing and increasing source of materials, ideas, and plans.

Well in advance of any planned instructional program, a conference of teachers should be held. The amount of time to be allotted for the unit, the approaches suitable to the arousal of student interest and the stimulation of student motivation, the selection of resource materials and resource people, and methods of evaluation should be discussed and agreed upon. Duplication and repetition should be avoided.

In addition, teachers who feel that students' interests and needs are basic to effective planning may wish to canvass the class for concerns relevant to the problem area. Such teachers will consider which educational experiences will facilitate the development of the desired behavior patterns. Resource units are most effective when they are the product of group thinking.

The first step in constructing a resource unit is to identify the program, and for this the teacher needs a teaching file. Thus, if a teacher plans to devote time to the study of alcohol problems, she/he might prepare a resource unit as an aid in planning her/his teaching. It is obvious that this will involve consideration of a cluster of problems within a broad area, e.g., the physical and psychological effects of alcohol, drinking and driving, social and legal controls, drinking by minors, alcoholism, and many others. The identification of these problems, and the decision to choose specific ones for inclusion in the resource unit, quite often constitute the first project for participants in a workshop.

As with other teaching units, the teacher will want to select and plan for the most appropriate and effective methods to use.

Effective elementary level programs of guidance and specialized activities - juxtaposed with direct instruction about alcohol - may offer opportunities for the growing personality to learn to use the realities of the environment for personal achievement and satisfactions. These activities may include club work; social and square dances; team and individual sports with carry-over value in after-school, leisure-time activities; the encouragement of camping experiences; creative activities in art, music, handicrafts and hobbies of all types.

Following are descriptions of methods and copies of materials that have been used in actual alcohol education of youth.

SUGGESTED TEACHING TECHNIQUES

I. SOME METHODS DESIGNED TO GIVE INFORMATION, FACTS AND IDEAS -- *

A. Lecture: An organized, verbal presentation of facts, values, experiences, observations, and ideas by the teacher or some other qualified person. The lecture is an efficient way for the teacher to "cover material." For the learner, the lecture is not too effective since the learner is only passively involved in the learning process.

B. Resource Speaker: A lecture or talk by a person uniquely qualified to discuss alcohol use or misuse; speakers may be a university and state health or alcohol educator, a physician involved in alcoholism therapy, members of Alcoholics Anonymous, or a police officer. A resource person can be used in a number of instructive ways. The resource people can make their presentation and then answer questions; they can leave after their presentation and let the teacher and students discuss their remarks; or their presentation can be in the form of an interview session with the teacher and students. If the teacher knows the resource person she/he can plan a mode of presentation which will use the resource person most effectively. A follow-up by the teacher is important to re-enforce and make sure the objectives were met.

C. Panel Discussion: A group of students and/or resource persons presenting material gained from research or points-of-view to the total class. Panels may be planned or spontaneous; they may be organized for discussion like a symposium or competitively as in a debate. This approach provides good involvement for the participants but is essentially passive for the rest of the class unless at some time during the panel discussion the class is given an opportunity to become involved.

D. Reading and Reporting: Assignments in which students are either given readings from a major list, or permitted to select and read sources of their own choosing, with teacher approval. An oral report to the class or a written report to the teacher (or both) may require that the student differentiate between various kinds of information by organizing it in some unique way. Reading and reporting can be used most effectively if it is combined with other methods such as the panel discussion. The teacher should remember that the aim of reading assignments is to obtain useful information rather than practice reading skills.

E. Films and Filmstrips: Visual presentations which are useful for presenting information, facts, and ideas.

* Adapted from: *Teaching About Beverage Alcohol*, State of Illinois, Office of the Superintendent of Public Instruction, pp. 49 - 50.

F. Visual Transparencies: Visual projections useful for presenting graphs and similar materials. They can be designed by students or by the teacher and produced at school on equipment which is generally available in most schools.

G. Problem-Solving Approach: The teacher should plan a learning situation in which the student will encounter a problem. The student must become aware of the problem, be able to state it, and begin to analyze it. He or she must be able to formulate tentative hypotheses, to test the hypotheses, and to draw conclusions based on the results of these tests. To use this approach, the student must be able to gather data from library research, from his/her own observations, and from controlled experiments.

II. SOME APPROACHES TO ENCOURAGE THE INVOLVEMENT OF THE LEARNER -- *

A. Transparencies: Some transparencies help present information and ideas; others are designed to ask questions and stimulate discussion. Transparencies are useful devices for varying the pace of a lecture. They help the teacher present information in a visual medium which has high attention appeal for students.

B. Films and Filmstrips: Any type of visual display adds another dimension to learning along with listening. The use of films, filmstrips, and visual transparencies, with thoughtful planning, can provide information in a motivating context as well as stimulating thinking, discussion, and questioning.

C. Activity Projects: Particularly helpful to learners who are not essentially verbally oriented. Because they involve some real activity on the part of the learner they tend to stimulate attention. Teachers may serve to initiate activities, but students should be involved in various ways.

EXAMPLES:

1. TOPIC: Varying strengths of alcohol in drinks and beverages

Purpose: To learn how the relative amounts of alcohol in beer, wine, and liquor are determined.

Activities: View a film or collect resource material about brewing, wine making, and distilling. Organize study groups in class to research material about making wine, beer and liquors. Construct with the students a demonstration which indicates the meaning of "proof" as it relates to alcohol content. (If students have learned about the processes involved in making wine, beer or liquor, they should be able to construct their own explanation of the meaning of "proof.")

* Adapted from: *Teaching About Beverage Alcohol*, State of Illinois, Office of the Superintendent of Public Instruction, pp. 50 - 54.

End with a question and answer session or a general discussion regarding the above activities. Be certain, at the end, that the students understand the objective was to see how drinks (e.g., martini, whiskey sour, etc.) and beverages (e.g., beer, wine, liquor, etc.) can range from mild to strong and how their alcoholic content is established.

2. TOPIC: What effects does alcohol have on the body?

   Purpose: To observe the effects of alcohol on movement and coordination and to determine the effect of alcohol on tissue.

   Activities: Arrange with the Department of Public Safety to view films of persons in various stages of intoxication.

   Select films on health which describe the effects of alcohol on the human system.

   Arrange with the biology instructor to demonstrate the effects of alcohol on live tissue by taking some animal tissue and exposing it to alcohol.

   Arrange for the local chapter of Alcoholics Anonymous to discuss with the class the symptoms of alcoholism.

D. Self-Tests: Present students with questions they must answer, but on which they are not graded. Answers are provided either by the teacher, through discussion or by way of a prepared answer sheet. Self-tests can be based on general information or on specific research or conceptual reports. The assumption behind the self-test is that when a student must decide how to answer a question he/she is more motivated to learn the correct answer and to remember it. Self-tests can be knowledge tests, or they can "shade over" into the realms of attitudes and opinions. Examples given below include all these types plus a form with all possibly correct answers, a test based on a film, and a test based on information gained from becoming acquainted with classmates.

   EXAMPLES:

   1. Student Opinion Poll

      Teachers can construct their own student poll by having the students list from five to ten statements, facts which they know or opinions which they maintain about alcohol. By selecting the best of these statements, you can construct the poll.

Check those statements with which you agree or which you believe to be true.

(F) 1. Alcohol is a stimulant.

(T) 2. Misuse of alcohol is a major problem in the United States.

(T) 3. Most teenagers try alcoholic beverages although it is illegal.

(T) 4. Alcohol is a depressant.

(T) 5. Drinking and driving are not compatable.

(T) 6. Alcoholism is a disease.

(T) 7. One 12 oz. bottle of beer contains about as much alcohol as an ounce of whiskey.

(F) 8. The effect of alcohol on the body is determined only by the amount consumed.

(T) 9. Beverage alcohol is a source of calories.

(F) 10. The size of an individual has no relationship to the effect of alcohol on that person.

(F) 11. Ninety proof whiskey means it contains 90 percent alcohol by volume.

(T) 12. In general, it can be stated that drinking alcohol lowers a person's inhibitions.

(F) 13. Only about half the people of legal age in the United States use beverage alcohol.

(T) 14. Only a small percentage of drinkers become alcoholics.

(T) 15. Certain studies indicate that alcoholism can be hereditary.

An opinion poll such as this could be used as an introduction to the subject area and will give the teacher some idea of the knowledge and misconceptions that the students have and will, therefore, guide his/her approach to the subject. In addition, this type of introduction will very likely spur interest in the topic.

2. Pre-Test in the Study of Alcohol

A teaching unit on alcohol is introduced by the teacher. Explain that in giving this test she/he is seeking information on how much knowledge the students have concerning the use and misuse of alcohol. Place a "T" in front of the true statements, and an "F" in front of the false statements.

(T) 1. Alcohol is a drug.

(T) 2. Alcohol is a food.

(F) 3. In the body, alcohol is burned up just as food is.

(F) 4. Because it is a stimulant, alcohol tends to pep a person up.

(F) 5. Everyone's body reacts the same way to the same amount of alcohol.

(T) 6. Alcoholic beverages can be fattening.

(T) 7. A person can die of alcohol poisoning.

(F) 8. You can sober up quickly by drinking black coffee and dousing your head with cold water.

(F) 9. Anyone who drinks at all is likely to become an alcoholic person.

(T) 10. Alcoholic individuals can be helped.

E. Discussion: Verbal interaction between teacher and students and between individual students. Discussion can be initiated by the teacher asking questions in which one answer leads to another question. Good discussion requires that the teacher avoid dominating the communication. Discussion is more difficult in large groups. For this reason, the class may have to be divided into groups of three to eight. The teacher can spend some time with each group to monitor the discussions. If the members of each group are interested in the topic, the discussion will progress without teacher direction.

EXAMPLE:

1. What would you do?

Use: A discussion on possible actions concerning alcoholic beverages and the situations and reasons involved.

Materials: Three situations (given below)

Procedure: The instructor should pass out the sheet with the three situations.

Use open discussion to determine what Jane, Bob, Jim, and Bill should do, what they will do, and how they will account for their actions.

a. Jane is attending a party where drinks are being served. Jane is 17 and does not believe in drinking. In your opinion, what should Jane's reaction to this party be?

b. Bob is 17 and attending a party at a friend's house. Bob drinks at home but does not usually drink outside of his home. At this party, the host suggests taking some of his parent's liquor. There are no adults present. What will Bob do? What should Bob do?

c. Bob, Jim, and Bill are on a fishing trip. They have camped far from anyone else. All three boys drink occasionally, and Jim has brought some liquor from home. What reasons could be given for any of the boys to refuse to drink? What reasons could be given for drinking?

F. Tape Recordings: Discussion in one class can be recorded and the tape used as a basis for discussion in another. The audio portion of television programs and conversations and speeches from meetings with professionals (e.g., physicians, psychiatrists, psychologists, sociologists, public health officials) and members of Alcoholics Anonymous can be taped and used later in class.

G. Analysis of Advertisements: Another basis for discussion can be selected advertisements for alcoholic beverages printed in magazines and newspapers. These can be collected by the teacher or brought in by students -- or both. An advertisement can be given to a small group for analysis -- particularly in regard to the motivations being encouraged, the perceptions the reader is expected to have, and the values he/she is expected to bring to the reading.

Students should become aware of some of the misleading aspects of advertising. Critical thinking must be developed in an individual concerning all advertising. The need for critical thinking about advertising can easily and interestingly be developed and correlated with the alcoholic beverages.

Alcoholic beverages are advertised in a wide variety of ways. Children have seen, read, and heard these advertisements since a very early age and have formed some opinions about them.

A collection of various alcoholic beverage magazine advertisements can be assembled by the class as a group. Tape recordings or notes taken of audible commercials could be used. Also, personal observations of television commercials could add a great deal to the discussion.

These examples would be subjected to several questions concerning their validity and the motivational factors to which they are appealing.

The following points should be brought out:

1. Validity -- Are the statements reasonable or are they exaggerations?

2. Are statements made which can't be proved?

3. To what motivational factors are the advertisements directed -- manliness, grace, peer acceptance, "everyone else is doing it," identification with desirable status, others?

4. What type of setting is pictured? What does this setting suggest?

5. Any other questions or pertinent ideas the students might have could be discussed.

EXAMPLES:

1. Student Activities

   a. Have the student write commercials for or against alcohol.

   b. Get someone from a TV station who knows about ethics of advertising and have her/him discuss with the students the pro's and con's of advertising liquor on TV and radio.

   c. Have the class do a survey of those publications which accept liquor advertisements and those which do not.

H. Field Trips: Visits made to appropriate facilities which are not available at the school. The motivational value of a field trip is usually worth the time it takes to transport students from the school to another location. Field trips should be coordinated with other instructional activity in the classroom. Some suggested field trips are:

1. Plan a tour of a facility which treats persons with alcoholic problems.

2. Find out what is available at nearby museums which might relate to alcohol, and take your students to visit these relevant exhibits.

3. Plan a visit to the facilities of the temperance organizations in your area.

4. Take a field trip to your local police department or department of public safety, and learn how police handle problems involving alcohol and the law.

5. Take a field trip to one of New York State's breweries or wineries.

I. Laboratory Experiments and Demonstrations: An example of a scientific principle or an experimental proof of an observation. In the field of health, demonstrations and experiments in which students themselves can become involved are very useful in teaching some concept which might otherwise be missed if verbal communication were relied upon entirely.

III. VALUE CLARIFICATION TEACHING STRATEGIES

The alcohol problem in our schools can be approached as a "people problem." This approach gives consideration to student's feelings, values, interests, and actions. Students shall be actively involved in responsible decision-making activities for success in the over-all learning process.

The concept of building values can become complex and puzzling. There are differences of opinions as to whether values can or should be developed. Teachers should take a good look at what education contributes to value development. Education has always tended to emphasize knowledge and information accumulation.

There has been a tendency to neglect concern for the student as an individual involved in the educative process. Educators should recognize that understanding and appreciation of another person's values enhance the chance for transfer of his/her knowledge into behavior.

Understanding and appreciating another's values does not mean accepting the values of one's own life nor does it mean condoning misconduct. It does require one as a teacher to recognize that she/he owes the same respect to the students who have value systems different from her/his own as she/he does to those whose values she/he shares. A person's behavior is motivated by a value system that belongs to her/him alone; therefore, all students are individuals who have value systems that determine the reasons they behave in varying ways.

Decision-making is a process that allows a person to make a selection from two or more possible choices. If choices are to be made that will guide one's life, the person must be able to make a free choice. Coercion has no place in assisting decision-making. You can help your students best by:

1. Unconditionally accepting the student and his problem.

2. Not giving advice; help her/him to clarify questions and comments that concern her/him.

3. Looking at the issue from the student's point of view.

While techniques of problem solving are important in the process of decision-making, additional limitations are important to consider:

1. The individual makes the decision unique.

2. Her/his capabilities limit her/his choices.

3. Decisions are limited by what she/he is willing to do.

4. Lack of information limits her/his choices.

Therefore, in addition to the student's being able to clarify his/her values, he/she needs ample information about herself/himself and her/his surroundings in order to develop the alternatives in her/his decision-making. By exploring the possible outcomes of her/his alternatives and how they affect her/his value system, she/he learns to be systematic in her/his decision-making. This enhances her/his opportunities for making realistic decisions for herself/himself.

Some of the current approaches to alcohol education still deal with scare techniques and/or a straight pharmaceutical approach. Both of these techniques have been failures.

In alcohol abuse education specifically, experience indicates that value building and factual knowledge do not complete the task of alcohol abuse prevention. Smoking physicians and overweight nutritionists are just two examples that indicate values and facts do not necessarily change health behavior. There must be a realistic alternative for each individual.

The specific aims of a values clarification approach are that:

1. It helps people to be more purposeful. People learn to focus on those specific purposes in life that they hope to achieve.

2. It helps people become more productive. With a focus in mind as to what a person hopes to achieve in life, her/his outlook is one of optimism and a sense of accomplishment.

3. It helps people have better relations with each other. People are more sure of themselves and exhibit stronger commitments to each other.

Values clarification is not a panacea. It is simply another technique of teaching in the area of alcohol education. Used wisely, this technique can provide new insights into the problem of alcohol use and abuse.

Following you will find some examples to help you in formulating plans for a values approach to the teaching of alcohol education.*

A. YES - NO - MAYBE?

Objective: To provide students with opportunities to identify and experience methods of saying "no" gracefully.

Principle: Peer pressure is a powerful force which often causes internal value-conflicts within the individual. People often "go along with the crowd" because they are afraid or unable to say "no."

Learning Activities:

1. Hold small and large group discussions on peer pressure, going along with the crowd, and saying "no." Have students consider the timelessness and importance of being able to say "no" on certain occasions.

2. Have students develop role playing situations in which people are confronted by a yes-no situation.

   Examples:

   a. A friend asks to copy your school assignment or to help cheat on a test.

   b. Someone in your group of friends suggests that the group should "borrow" some bicycles from in front of the school and go for a ride during the lunch hour.

   c. You stop by your best friend's house after school. Your friend's parents are not at home. Your friend offers you (1) a cigarette, (2) a can of beer, or (3) one of his mother's "diet" pills.

* Adapted from: *Drug Education in the Secondary School, Approaching the Problem Through Value-Clarification Teaching Strategies*, Nebraska Dept. of Education, 1974.

B. HEADACHE #1

Objective: To provide students with opportunities to identify advertising tricks and gimmicks.

Principle: Advertising is usually designed to play upon human needs as a means of influencing or encouraging you to use a product. Most drug-like products are advertised in a way that appeals to emotional needs. Emotional needs often represent immediate kinds of personal problems. Some advertisements suggest an immediate solution to problems through the use of a product.

Learning Activities:

1. Hold a group discussion on emotional needs. Have the students brainstorm for lists of emotional needs.

   Examples:

   The need:
   - to be physically attractive
   - to be accepted by others
   - to be seen as having worth (status)
   - to feel relaxed
   - to be comfortable in social situations
   - for love and affection
   - to be seen as successful
   - to be seen as competent.

2. Have students collect advertisements from magazines and newspapers related to drug-like products (everything from pain relievers to deodorants). Analyze the ads in relation to the ideas portrayed and the believability. Identify the human need played upon.

3. Have students watch and take notes on television advertisements for one week. Discuss the findings, and develop a list of 10 advertisements. Analyze the 10 advertisements in relation to the ideas portrayed and the believability. Identify the human needs played upon.

C. THE GALLUP POLL

Objective: To provide students with opportunities to identify the wide range of attitudes and beliefs in our society in relation to the use and/or abuse of drug-like products.

Prinicple: There is a wide range of attitudes within our society in relation to the use and/or abuse of drug-like products. Society condones the use of some drug-like products and condemns the use of other drug-like products.

Learning Activities:

1. Through an interview have students brainstorm for the type of information which can be obtained in relation to attitudes and beliefs about drug-like products. Such information might include questions about:

    a. General knowledge of drug-like products (all drugs...aspirin, deodorants, hairsprays, alcohol, marijuana, LSD, etc.)
    b. Discovering what the terms "use," "misuse," and "abuse" mean to different people
    c. Attitudes in relation to legal and illegal use or abuse of drug-like products
    d. Attitudes toward penalties of drug users or abusers (both legal and illegal drugs).

2. Determine groups of people to interview, i.e., parents, students, teachers, doctors, businessmen, etc. (only for 5th or 6th graders).

3. Compile the results of the interviews and analyze the findings. Analysis should reveal a wide range of attitudes and beliefs. Compare the findings to attitudes and beliefs in relation to pollution, fluoridation, conservation, etc.

D. WOULD THE REAL MR. X PLEASE STAND UP?

Objective: To provide students with opportunities to identify their personality traits by openly looking at themselves.

Principle: People often perceive themselves differently than they think other people perceive them. What we "think about ourselves" and what we think that other people "think about us" are often quite different; e.g., the small boy who is praised by his mother for "being such a good boy" when the boy knows he has been "sneaking cookies out of the cookie jar" when he was not supposed to.

Learning Activities:

1. Have the students fill in the following chart about themselves.

(in relation to)	Dress	Personality	Behavior	Other Thoughts
I feel that I				
My friends think that I				
My parents think that I				
I wish that I				

2. Have students analyze what they have said in their individual charts. Discuss the reasons for differences on the chart. (This might be a good exercise for teachers to do, too.)

E. THE GREAT DEBATE

Objective: To provide students with opportunities to identify methods used by society in creating rules and laws.

Principle: Societies are governed by a variety of rules. Such rules are usually developed for the well being of the total society. Often the rules that are developed are rules that satisfy many groups within our society, but not necessarily the society as a whole. The development of rules very often involves compromises on the part of groups within the society. The rules are not always fair to all groups within the society.

Learning Activities:

1. Divide the class into two groups, a "pro" group and a "con" group. Have each group elect four representatives to take part in a debate to develop a variety of rules. The members of each group should develop the arguments that their representatives will use to defend their point of view, but only the representatives are able to voice the views for the groups. Provisions should be set up to allow for "recesses" in the debate so that groups can reorganize to develop new strategies, arguments or compromises.

   Suggested ideas for debate and development of rules:
   a. Chewing gum in school
   b. Playground rules (choosing teams, riding bicycles, playing fair, etc.)
   c. Lunch room conduct
   d. Students smoking
   e. Suppose that alcohol had just been discovered; should it be legalized?

2. Discuss what happened in the debate. How were the final decisions reached? Are the rules fair to all? What compromises were made?

3. Compare the rules that were developed to other rules in our society.

F. BLAME IT ON THE STONES*

"Mister Marvin Middleclass is really in a stew, wondering what the younger generation is coming to. And the taste of his martini doesn't please his bitter tongue. Blame it on the Rolling Stones!

"Mother tells the ladies at the bridge club everyday of the rising price for tranquilizers she must pay. And she wonders why the children never seem to stay at home. Blame it on the Rolling Stones!

"Father is at the office nightly, working all the time trying to make the secretary change her little mind. And it bothers him to read about so many broken homes. Blame it on the Rolling Stones!

"Blame it on the Stones! Blame it on the Stones! You'll feel so much better knowing you don't stand alone. Join the accusation, save the bleeding nation. Get it off your shoulders. Blame it on the Rolling Stones!"

To Think, Write, and Talk About:

1. What do you think this song is trying to say?

2. What societal concerns does the song hit upon? Generation gap? Apathy? Rationalizing societal problems? Placing blame elsewhere? Hypocrisy? Double standards?

3. Have you ever blamed someone or something else for your problems? Did it really solve your problem? Say more.

4. Why is blaming someone else a cop-out? What other alternatives are open to you?

5. Is blaming someone else a common practice by large segments of our society? If so, what does this say about our society?

* From the album Kris Kristofferson, Me and Bobby McGee. Columbia Records.

SUMMARY OF INSTRUCTIONAL TECHNIQUES PRESENTED ABOVE

The examples of instructional techniques which have been presented above do not exhaust, by any means, the range of possibilities which are available to the teacher. Instructional techniques and methods are best if they meet the following assumptions:

1. Any instructional technique which involves the students themselves in the activities of learning is better than a technique which is entirely didactic.

2. Learning situations which take advantage of the natural interests of the learner are preferred to situations which are outside the range of interests of the student age receiving instruction.

3. The purpose of education about alcohol is to help students analyze their own attitudes and values concerning drinking. Instructional situations which give the student opportunities to discuss and react to many different attitudes and values are to be preferred to instruction which presents facts without opportunities for interpretation.

4. Education about alcohol should be approached as a topic which can draw from the resources of all the disciplines offered by the school. Inter-departmental and inter-disciplinary efforts in the development of a program of education about alcohol are preferred to instruction which is isolated and not made relevant to the rest of the students' education.

-CHAPTER IV-

SUPPLEMENTARY CONTENT INFORMATION FOR THE TEACHER

SUPPLEMENTARY CONTENT INFORMATION FOR THE TEACHER*

ALCOHOL: AN OVERVIEW FOR THE TEACHER

REACTION FACTORS ARE VERY, VERY COMPLEX

Reactions to alcohol vary tremendously because people react differently to the same amount of alcohol. Reactions depend on many complex factors. A person may be influenced by physical factors: how fast one drinks, whether one has eaten, the type of beverage, body weight, body chemistry. She/he may also be influenced by psychological factors: the situation one is in, one's mood, one's attitude toward drinking, one's drinking experience. For example:

- How fast a person drinks

  If a person sips an alcoholic beverage containing 3/4 fluid oz. of pure alcohol slowly enough to make it last for a full hour, he/she is not likely to feel any effects. The body will be burning up the alcohol steadily at the same rate at which the bloodstream is absorbing it. But if one quickly gulps her/his drink, she/he will quickly feel the effect, and it will take an hour for that feeling to wear off.

- Whether she/he has eaten

  If a person has eaten before drinking, it may slow down the rate at which alcohol is absorbed into the blood. But beyond the absorption stage, there is considerable evidence that the metabolism of alcohol cannot be significantly speeded up by the prior foods that an individual eats.

- The type of beverage

  When alcohol is consumed in the form of beer or wine, it has a slower effect than when the same amount of alcohol is consumed in the form of liquor. Beer and wine contain nutrients and other substances which slow down the absorption of the alcohol, resulting in lower alcohol concentrations in the blood. Plain water, by diluting the alcohol, slows the absorption. Carbonated drinks are absorbed more rapidly and have a faster onset of action.

- A person's body weight

  A 180 - pound person has more blood and other fluids in her/his body than does a 120 - pound person. So, the same amount of alcohol will be more diluted in the heavier person's bloodstream, and it will not affect her/him as soon or as strongly as it will affect the 120 - pound person.

* Portions of this section were adapted from materials developed by the Instructional Development Unit of the Educational Communications Center and the School of Education of the State University of New York at Albany.

- A person's body chemistry

Every person has special conditions within her/his own body. Some people can drink a great deal of alcohol and seem to remain quite sober. There are others who react with nausea and vomiting when drinking even small amounts of alcohol.

- Tolerance

Tolerance is a condition in which it takes more and more alcohol to produce the same effects. Some research holds that alcohol tolerance is a process of adaptive metabolism in which the body cells increase their capability for metabolizing alcohol; other research suggests that much of the tolerance is really a learned ability to adjust to the physical effects of alcohol on speech, sight, and movement.

- Psychological and circumstantial factors

Other factors that influence reactions are such things as the time and place of drinking, the person's mood, attitudes, as well as drinking experience.

Alcohol the Drug

Alcohol can be classified as a mind-altering drug because it can depress the action of the central nervous system.

In the normal drinker, intoxication may be accompanied by feelings of exhilaration, loss of restraint, enhanced sociability, increased emotional ability, and impairment of performance on certain cognitive and perceptual tasks. The physical signs of intoxication may be slurring of speech, abnormal gait, impaired motor performance, and, in some instances, disturbance of sensory perception. Extreme intoxication may lead to a depression of the central nervous system, and to a state of stupor with an attendant risk of death.

Stimulant or Depressant?

Alcohol is a depressant, not a stimulant; but sometimes a drinker imagines that she/he is being pepped up.

Alcohol's first effect on the brain is to slow down the brain area that controls judgment and thought. In slowing down this area, alcohol releases the drinker's inhibitions. She/he may feel more relaxed, unusually free-and-easy. But her/his nervous system is being depressed, not stimulated; and this depressant action increases if the person continues to drink. Thus, alcohol may interfere with a person's normal ability to do certain mental tasks: to remember, to understand, to reason, to make decisions.

Alcohol also tends to slow down the brain area that controls muscular coordination. Thus alcohol may also interfere with a person's normal ability to do certain physical tasks: to coordinate movement of the arms and legs, to speak clearly, to maintain balance.

If a person takes in alcohol faster than the body can oxidize it, the alcohol concentration in the blood will increase. As the alcohol concentration builds up, one's reactions become less dependable when she/he tries to reason, to remember, to coordinate the muscles that help her/him to stand, move, drive. With the depressant action increasing, relaxation may give way to feeling high, then drunk and finally -- if she/he continues to drink -- to passing out.

Common Reactions to Alcohol

Alcohol affects everybody even though not in the same way. Yet there are certain common symptoms as the intake is increased.

Giddiness, slow judgment and impaired coordination are the symptoms generally associated with mild intoxication. Increased drinking often brings on fuzzy speech, blurred vision, and slow reaction time. Heavy drinking is accompanied by staggering, loss of balance and seeing double, and the final stage of intoxication is characterized by clammy skin, dilated pupils, and a state of unconsciousness.

If a person rapidly consumes a large amount of alcohol (more than a pint), it may result in death.

Moderate amounts of alcohol do not harm body organs in a well-nourished person. But large amounts and high concentrations of alcohol may lead to serious problems.

Alcohol as a Food

To understand how alcohol differs from most foods, we need to trace it through the three stages that foods go through:

- Digestion
- Absorption
- Metabolism.

Before food can be absorbed, it must undergo a series of mechanical and chemical changes that constitute digestion. It is then absorbed into the bloodstream to nourish the body tissue.

Digestion

This process, starting with changes in the mouth, proceeds through a long series of enzyme actions in the stomach, the small intestine and the large intestine. For example, small amounts of food may leave the stomach in one to four hours, while the last of a full-sized meal may not have left for six or seven hours, after which it will pass through two-thirds of the small intestine before absorption can take place.

In contrast to this long digestive process for most foods, alcohol is ready for absorption into the blood immediately after ingestion.

Absorption

Alcohol is rapidly absorbed from all parts of the digestive tract, including the stomach. Because of rapid absorption, wide distribution and easy entrance to the brain, alcohol may affect a drinker very quickly.

Metabolism

Alcohol is metabolized in the liver quickly, supplying seven calories of energy per gram.

Alcohol becomes the "preferred fuel." Instead of burning fat, as with food oxidation, the liver burns alcohol. The result is that the build-up of fat deposits may impair the liver's ability to function. Again, different from other foods, the rate at which alcohol is oxidized does not depend upon the energy used by the body. For all practical purposes, the amount of alcohol (about 3/4 ounce) oxidized in one hour is the same for all people under all conditions. In other words, two martinis will require four hours to oxidize. Within each person, the sobering up process is dependent on this phase of alcohol metabolism, and therefore, little can be done to speed it up.

Nutrition

The alcoholic is often found to be suffering from malnutrition. Let's discover why. The principle reason is that alcohol supplies relatively large quantities of calories but no nutrients such as proteins, vitamins, minerals, and amino acids necessary for the regeneration of tissue. It satisfies the appetite yet deceives the body with "empty" calories. These calories are able to maintain one's energy level yet the cells do not have the nutrients necessary to repair themselves, thus malnutrition results.

For example, a person drinking a pint of 100 U. S. proof distilled spirits a day would be consuming more than 1,300 calories or possibly one-half to two-thirds of a normal caloric intake. This heavy alcohol intake can result in malnutrition by interfering with one's desire for food and its subsequent digestion and absorption.

Social Backdrop and Cost of Drinking

The fact that two-thirds of the American people drink is an important backdrop for understanding a serious difficulty in dealing with alcoholism. Drinking is such a familiar, accepted, intimate part of our everyday social scene, that it is hard to capture our attention and interest with regard to what it is doing to us as a nation. Especially when most of us are not directly affected by serious cases of alcoholism.

Nevertheless, the cold statistics are staggering in terms of the practical costs. For example, on an average day, 35 - 50 million dollars is lost in work time, health and welfare, and property damage, because of alcoholism. Two million five hundred thousand (2,500,000) arrests each year have to do with alcohol. More than half a million disabling injuries suffered in crashes are alcohol involved. One-half of all homicides and one-third of all suicides are alcohol related. About 36,000,000 Americans are harmed directly or indirectly because of alcoholism. The life expectancy of every alcoholic is decreased by about 10 years. Since there are 10 million alcoholics, what does that mean in the sheer loss of life?

It is impossible to really capture in figures the human suffering brought about by alcoholism -- in the ruined lives, the broken homes, the deserted families, and the damaged psyches of children. Although the social consequences of alcoholism are almost beyond our imagination, every single case of alcoholism must be handled individually.

Who Are the Alcoholics?

Well, who are the alcoholics? The image that the alcoholic is a bum lying on the streets of Skid Row is a myth. Less than five percent of alcoholics are in Skid Row. Most excessive drinkers are not Skid Row derelicts. They live in respectable neighborhoods, with their husbands or wives, and try to do everything to see their children through school. They go to church, pay taxes, and continue to perform more or less effectively as salesmen, bank presidents, housewives, farmers, machinists, stenographers, teachers, clergymen, physicians, etc.

What's the Cause of Alcoholism?

Biochemical: There has been much effort to see whether excessive drinking could be explained by any physical or chemical mechanisms of the body. One major study addresses itself to the question, "Can a predisposition to alcoholism be inherited?" The answer is "yes." In some forms of alcoholism, having an alcoholic parent predisposed the offspring to alcoholism four to one, even without contact with that parent. We need to remember that the genetic factor is just one of the many possible influences.

The predisposition to alcoholism is similar to the finding that some people can consume large quantities of food without gaining weight, whereas some people gain a lot of weight with a relatively small intake of food. With regard to alcohol, it appears that some people (that is, not all alcoholics) are genetically predisposed to higher normal enzyme function levels. This means that their systems can break down alcohol much more efficiently, and therefore they consume more.

Psychological: While there is no question that psychological factors play an important role, the problem is in isolating or identifying them in some practical way. Some researchers suggest that alcoholics are psychologically "different," that they possess a common set of traits which define the "alcoholic personality." However, there is no agreement on the precise identity of these traits, nor on whether they are causes or results, or some combination. If there is such a thing as an "alcoholic personality," its specifications are poorly defined and often contradictory, and seem to apply broadly to all mental illness.

Sociological: Another area of research is aimed at determining why it is that alcoholism is widespread in some national and cultural groups but rare in others. The highest reported rates of alcoholism are found among the French, Americans, Swedes, Poles, and Northern Russians.

The relatively low incidence groups include the Italians, some Chinese groups, Orthodox Jews, Greeks, Portuguese, and Spaniards.

It does not seem likely that genetics can adequately explain these large group contrasts. We also know that low rates of alcoholism cannot be attributed just to the fact that they don't drink. Most Mormons and Moslems do not drink because of their religious beliefs, and their alcoholism rates are low. But other groups, Italians, Greeks, Chinese and Jews, have high percentages of drinkers -- and <u>their</u> alcoholism rates are also low. In Italy, the per capita alcohol consumption is high, rated second only to France, but the rate of <u>alcoholism</u> among Italians is relatively low.

In analyzing social group behavior, it seems that the lowest incidence of alcoholism is associated with the following cluster of mores and attitudes:

- The children are exposed to alcohol early in life, with a strong family or religious group.
- The beverages commonly used contain relatively large amounts of non-alcoholic components.
- The beverage is considered mainly as a food, usually consumed with meals.
- Parents present a constant example of moderate drinking.
- Drinking has no moral attachment. It is neither a virtue nor a sin.
- Drinking is not viewed as proof of adulthood or virility.
- Abstinence is socially acceptable.
- Excessive drinking is not socially acceptable.
- Perhaps most important, there is a wide and usually complete agreement in the group on what might be called the ground rules of drinking.

So, what is the cause of alcoholism?

It isn't very helpful to talk about alcoholism as if it were a disease of specific origin, susceptible to a specific cure. Although it is certainly a chronic disease, its origin is so complex that it defies any single answer.

We can find agreement that alcoholism can be recognized by excessive drinking that expresses itself as compulsive, and frequent loss of control over behavior.

While it is impossible to reduce the origins of alcoholism to the narrow confines of any single causal factor, it is possible to describe rather accurately the behavior of an individual as she/he gradually moves from the beginning stage of occasional relief drinking through progressive stages that end in the obsessive drinking which is alcoholism.

What Can Be Done for the Alcoholic?

When a wife complained that "everything was all right until my husband started drinking too much," a perceptive marriage counselor asked, "If everything was all right, then why did he start drinking?"

Rather than seeing the person only as an excessive drinker who needs to find a way to stop drinking, it may be helpful to also see that what we have before us is a compulsive person (whether it be drinking or gambling, or for that matter, overeating or overworking). With such a perception, the search for a solution takes a different tack: "What is at the root of his or her compulsive behavior?"

That is why the goal of treatment cannot be simply to remove alcohol. Whatever the procedures or therapies, they require alleviation of those pressures that trigger the compulsive behavior. If the person's drinking problem is seen as the process of adapting to a compulsive way of life in a vulnerable person, the treatment can be seen to rest on understanding the life pattern of the person.

So what do we know about problem drinking? We know a great deal, but we need to know a great deal more. Yet it would be a mistake to think that a person with a drinking problem cannot be helped. The greatest advance has probably been made in the area that is most helpful to any kind of recovery, that is, understanding. And the important step is the first step, whether it be a doctor, a clergyman, a clinic, a social worker, a psychiatrist, a hospital, or Alcoholics Anonymous.

But before the problem drinker can benefit from any help, she/he must first admit she/he really needs it. The bottom line of addictive alcoholism, the admission of complete defeat, contains the seed of recovery, and that is, an honest desire for help. That seems to be the all-important first step to recovery. And more than the absence of drink, the light at the end of the tunnel is rather an enlightened perception of life and the higher levels that lie ahead.

Dr. Morris Chafetz, director of the National Institute for Alcohol Abuse and Alcoholism, made this encouraging observation: "Studies show that where you can reach alcoholic people before their resources have been destroyed by neglect and disinterest, you can get up to an 80 percent recovery rate."

HISTORY OF ALCOHOL

Today in twentieth century America alcohol is available in a bewildering variety of forms--in wines, whiskeys, brandies, gin, vodka, beers. Virtually every type of alcoholic beverage conceived by people, from every culture the world over, is now available to the American drinker. One might stop and wonder where all these beverages came from, for the availability of this tremendous variety is only a recent development for the common person.

Tracing the lineage of various beverages takes one back to a number of beginnings in all cultures. Since alcohol is found in nature, one can assume that in one form or another, it was used by people in the Stone Age.

The earliest records of civilizations make reference to wine or beer, and in some cultures it was a staple on par with bread. Wine was in wide use in early times, and because pure water supplies were few and far between, wine was used in its place or mixed with it.

A Sumerian legend has it that wine was discovered by a woman who drank the fermented juice from a jar where fruit was stored. Each ancient civilization has its God or Goddess of the vine, such as in Egypt where the temple of the Goddess Hathor was known as the place of drunkenness.

The relationship between the drinking of wine and religious rituals is found in many cultures and is connected with the belief by some that wine is the blood of the earth. The grape vine appears in many forms of art and was cultivated extensively for its fruit.

Distillation was known in ancient Babylon but not widely used -- the preference being for wine.

Ancient Egyptians were not necessarily heavy drinkers although they made beer and were known by others as "lovers of wine." Most drinking took place as part of religious and social functions.

Wine is mentioned frequently in the Bible for its benefits; many Hebrew poets refer to it as "a gift of God" and "that which maketh glad the heart" and "causeth the poor man to forget his misery." There are a good many more instances of warning, such as "Who hath woe? Who hath sorrow? They that tarry too long at the wine. At the last it biteth like a serpent and stingeth like an adder."

The knowledge of wine making spread from the cradles of civilization westward to Greece.

In Athens, for example, social affairs were called symposia, literally, "drinking together." The excessive drinking at some of these gatherings, which started as occasions for intellectual discourse, was described by some observers in terms of the effect on the drinkers -- "upon their eyes a dark mist settles, memory melts away into oblivion and reason is lost completely." Aristotle commented on the fact that the tendency of wine made even free men (as opposed to slaves) insolent.

Attempts at temperance included diluting wine by law and appointing wine inspectors to supervise drinking at the symposia. These officials of course were very unpopular.

Excessive drinking by Athenians was counterpointed by the sobriety of the Spartans whose daily ration was about a pint and a half a day and he who got drunk could expect a beating.

This amount is very little compared to that consumed by some Greeks. Alexander the Great, for example, polished off six quarts in one sitting. During one such drinking bout, he killed his best friend, Clitus. Drinking of this sort was the basis for the religious cult of Bacchus, another name for Dionysos the Greek god of wine and orgy.

The spread of wines in classical times followed the trade routes of the Mediterranean with the Greeks introducing vineyards to Southern Italy.

Early Rome was in many ways as sober a community as Sparta. Those who engaged in drinking bouts were called "thick-headed" and there was a strict prohibition of women's drinking. There are a few instances of men beating their wives to death because the woman had fallen from grace by getting drunk. The husbands were freed by consent of the courts. This state of affairs in Rome was due to an ancient law of Romulus providing for the death penalty for women who drank. Abstinence was suspended, however, on religious feast days when even slaves were allowed a drunken revel. In general, the restrictions on drinking prevailed for about 600 years until, according to Roman historians, the Romans were "infected by Greek laxity." The Romans in many cases were intemperate in their drinking with disastrous results for some, as in th case of some Roman soldiers being massacred at a drunken feast by their enemies. Drink became more and more popular as did the gladiators at the Circus Maximus. It appears the riches of the empire loosened Roman discipline in drinking matters to the point that wine shops in Rome did a thriving business.

As with the Greeks, restraint was thrown to wind; Bacchanalian feasts were widespread in the late days of the Empire.

Early Christian writers were concerned with the drinking prevalent during this time as evidenced by St. Paul urging old women "not to be enslaved with too much wine, so that they might train young women to be sober." Pope Clement advised boys and girls to keep away from wine as an arouser of passions.

The westward travel of wine came to Gaul in about 100 B.C. when the Romans introduced it. Prior to that time the Gauls had a beer made from wheat and honey. After the introduction of wine, they took a great liking to it although it undid them, for very often they would get drunk after battle and then fall prey to the Roman soldiers. The Conquest of Gaul by the Romans and desire of the natives, promoted viniculture throughout what is now France, producing a great variety of wines for which the French are famous.

Even though the Roman empire disintegrated, wine growing in France and Germany expanded through the following centuries. Many vineyards were sponsored and run by religious orders to provide church wines and this helped the wine trade to flourish. During the Middle Ages an interest in the mysteries of Alchemy developed. Although most Alchemists tried to make gold, one outcome of their efforts was the rediscovery of the ancient Babylonian method of distillation. The vaporizing of alcoholic compounds as part of the process increased alcohol content from about 17 percent in some potent claret wines to about 40 percent in a good brandy. The name apparently coming from the German -- "brandwin" -- or burnt or distilled wine.

Brandy distilled from wine, beer or corn became popular during the 1400's in Europe especially in Germany and the low countries, possibly because of the colder climate there.

Usually all distilled spirits were called "hot waters" or strong waters as well as "aqua vitae " (water of life).

Distilling spread rapidly so that each national group had its favorite hot water or as the Scotch and Irish called it, usquebah, transformed by the English to whiskey. Most distilling was done at home by individuals but by the 1600's, distilling companies were forming. Distinct distilled spirits were entering the trade routes of Northern Europe that had previously only carried the various regional wines of France and Germany. Gin, brandy, and cognac, a mixture of brandies, were finding greater acceptance by more and more people.

Wine still held its place on the table of most people and as a social drink at gatherings. For some individuals such as Samuel Johnson, drinking as much as three bottles of port at a meal was not unusual. By the 1780's, leasure ardens were popular in England as a social meeting place to hear the latest news and observe the latest style as well as providing the availability of wine and food in a congenial atmosphere. Thus the forerunner of the modern restaurant came into being.

The westward movement of European civilization to America brought alcohol to the Indians who had never had it before. The impact of beverages such as rum and brandy given by the French and British were disastrous to the Indian for he had no tradition to cope with this new experience. Reactions were particularly savage and self-destructive of some tribes, particularly in Eastern Canada. There were some small tribes who lived a subsistence level existence and the introduction of alcohol released aggressive tendencies fostered by their life style which burst loose to the point where Indian braves getting drunk proceeded to kill their own families. In a short period of time some tribes were extinct. Other tribes such as the Hopi Indians in the Southwest were introduced to alcohol by the Spanish, but the Hopi saw the destructive reactions to alcohol and were able to outlaw it because of their tight knit social structure and insured the survival of the tribe.

The colonists crossed the Atlantic with good supplies of beverages for the trip and also with their European social customs concerning drink.

In Massachusetts, brewing had been started on a small scale in 1639. Each colony produced its own favorite drink from the natural fruits of their region, e.g., from such ingredients as pumpkin, grapes, and elderberries. Distilled spirits were produced from fruits, potatoes, turnips, and honey. In New England despite vocal opposition by Cotten Mather in Massachusetts, the most readily available drink used at most social gatherings was hard cider. It was usually associated with some useful activity. There was a saying that it took a gallon of apple john to construct a rod of stone wall. The Quakers of Pennsylvania also followed this custom, but their leaders in 1736 warned against the too frequent use of spirits.

In Virginia the planters brought with them and continued to import quantities of European wines. Throughout the colonies the home remedy for virtually any ill was apple jack, a distilled apple whiskey common to most colonies; in New Jersey, for example, it was called "Jersey Lightning."

Taverns were popular meeting places, for the only other building of any size in the early communities was the village church where imbibing was not only frowned upon, but in some cases the members of a church were disciplined, such as the Methodists did by decree in 1753, for drunkenness or for the buying and selling of spirits.

The tavern thus became the center for political debate and discussion and in most places was where the Sons of Liberty met to plan their part in the Revolution.

Rum had a very definite place during the 1700's in the development of the colonies because of its connection with the African slave trade.

This was called the triangle of trade of the colonies (slaves from Africa to the West Indies to grow sugar and make molasses, molasses to New England to make rum, rum in turn to Africa to be used by the slave traders to gather more slaves). By taxing this product, the Molasses Act of 1733 added its contribution to colonial discontent.

This interlude with rum was interrupted by the Revolution and made way for the wider use of whiskey (the home grown product) within the colonies. As well, it provided the first domestic challenge to the Constitution in the form of the Whiskey Rebellion in 1791.

The Rebellion resulted from a tax levied on distilled spirits, imposed by the Federal Government, to meet debts contracted by the States in the War for Independence. The unpopularity of this tax was widespread but centered on actual resistence in Western Pennsylvania where a great many settlers of Scotch-Irish descent had an estimated 5,000 stills in operation. Public protests and the raising of a whiskey army resulted in the appearance of Federal troops to enforce the law. The law proved so unpopular that eventually it was repealed in 1794 during Jefferson's administration.

The westward advance across the continent was always followed by the whiskey peddler or sutler who was often the first to complete his edifice in a new community.

Towns grew and had to have the civilizing influence of women, whose usual first social action was to establish a church which often became the base for temperance societies. These temperance groups stemmed from earlier attempts, such as the New York Temperance Society founded in 1808, which based its call for limited drinking on the fact that it would increase the efficiency of labor. These societies usually had ministers from various denominations as their spokesmen.

The Temperance Movement was a unique feature of American life in the 1800's. It reflected in its programs the vast changes then taking place in the country and within 80 years of 1830 had reached its zenith of influence through political action. In the mid 1800's, immigrants from Germany and Ireland were coming to America in increasing numbers, with their own traditions in the use of alcohol. The Temperance Movement, being predominantly Protestant in its outlook, resorted to missionary efforts among these large groups of Catholic immigrants. To emphasize the dangers of drinking, they related incidents where unfortunate drunkards were supposed to have exploded after having come in contact with an open flame.

Temperance activists did not limit their concerns just to the uses of alcohol, but were also active in the political struggle for the abolition of slavery. One result of this additional political action was that the Temperance Movement in the South did not develop until after 1900. The Civil War set the movement back somewhat when northern whiskey was traded for southern tobacco across the picket lines by individual soldiers. The last quarter of the 19th century saw great social changes take place -- the result of westward expansion and the growth of Industrial America.

Saloons sprouted in every community and could be considered as men's social clubs since women were not allowed. A tired working man could drink with friends in a congenial atmosphere suited to his manly tastes. Many saloons, to promote whiskey and beer sales, offered free lunches. Many distillers claimed great medicinal value for their product, advertising whiskey as a cure for anything from the croup to rheumatism. It was during this period that the Temperance societies came into their own and the most famous was the Women's Christian Temperance Union with Carrie Nation, with her hatchet for breaking up saloons, as its most notable member. Saloons also fell victim politically to another organization, the Anti-saloon League, formed in 1895. In reaction, many bartenders mounted the turned-over membership cards of fallen prohibitionists above their bar as trophies in this continuing war of wet against dry.

The Prohibitionist Party was formed in the 1870's, with a platform which included prohibition, female suffrage, and calls for an anti-polygamy amendment to the Constitution. Consumption of alcohol was increasing during this period of change, and availability reached the point where whiskey was obtainable in bulk in some grocery stores. The idealism of the prohibitionist was sparked by what became known as "The Women's Crusade" in which women from local church groups gathered to sing and pray in front of saloons in order to discourage men from entering. The effect was not long in coming, for between 1873 and 1875, 750 breweries went out of business throughout the country.

Slowly over the next three decades state after state enacted prohibition laws, some repealed them and then shortly would re-enact the prohibition. Prohibition was an issue in virtually every election in 1916 and many of its proponents wound up in Congress. This continuing struggle of wet vs. dry continued until 1919 when the 18th Amendment was passed and Prohibition came to the whole country overnight. The Volstead Act was passed in 1920 which was the enforcement law for Prohibition. For the next fourteen years, alcohol, though legally abolished for consumption, was produced by every conceivable method, and enforcement of the law became a major problem. As many as 50,000 violators a year in New York City alone were being arrested.

Although some of it was deadly because of improper distillation, alcohol was in wider use during Prohibition than before 1919. By 1933, the ill effects of Prohibition, such as the rise of gangsters like Al Capone and rum running, had changed many people's minds about the amendment. Some even blamed the depression on Prohibition. In that year, Prohibition was repealed. It was, for most, business as usual in the liquor trade making the transition from illegal "speakeasy" to legal bar very quickly.

Since the experiment with prohibition in America, the use of alcohol has kept pace with the changing scene in the country. There are no completely dry states in the nation and the quest for new and unique concoctions for cocktails have resulted in the great variety of beverages available. There are, for example, approximately 800 different American brands of whiskey. Women participate in drinking in greatly expanded numbers and have been influential in the production and marketing of some of the types of alcoholic beverages such as the light whiskies. World wide, alcohol has not been subjected to the American experiment of Prohibition, yet, the problems of alcoholism as a disease are certainly international. Many countries have established committees against alcoholism and have concentrated their efforts (as did the Soviet Union in 1954) on programs of education led by doctors and psychiatrists. In the United States, such programs have been developed only on the state and private levels so far. Alcohol, then, has been with humanity from the beginning of recorded time both to add to his enjoyment and relaxation but also to create a problem of concern for many.

ALCOHOL: WHAT IS IT?

Alcohol is a colorless, odorless substance whose basic elements are carbon, hydrogen, and oxygen.

Beverage alcohol is ethyl alcohol or ethanol, a particular type of alcohol among a variety of other alcohols such as methyl or wood alcohol, and isopropyl or rubbing alcohol.

They all contain a hydroxyl group (OH), but may vary in the length or arrangement of their other elements. (For example, the structural arrangement of elements in ethyl alcohol is C_2H_5OH, while that of methyl alcohol is CH_3OH.)

All alcohols are depressants and toxic to the body. But while ethyl alcohol is commonly used as a beverage, the others are unfit for human consumption. Methyl alcohol, for example, can cause blindness and death because it oxidizes very slowly and metabolizes as formaldehyde and formic acid.

An occasional deviant drinker has been known to consume such alcohol derivatives as antifreeze or sterno generally experiencing severe illness and possibly death. Even minute quantities of methyl alcohol may be considered lethal. With this in mind, all references to the word "alcohol" in this program should be understood to refer to "ethyl alcohol."

Besides alcohol and water, all spirits contain variable amounts of other volatile substances known as congeners. The congeneric content, then, is the sum of the main constituents in whiskey other than alcohol and water.

The congeners include additives for color and taste and even come from the wooden barrels in which the spirits are aged. They are present in extremely small quantities, but do affect the quality and ultimately the price of the beverage.

The purity of the spirits will affect the rate of absorption by the body and also the temporary after-effects of drinking, since the congeners retard the absorption rate of ethyl alcohol and may increase the after-effects.

Industrial alcohol is now manufactured from petroleum products. Industrial alcohol is a poison that can cause death.

Shaving lotions contain as much as 35% alcohol. Vanilla extract may contain 30% alcohol and cough medicine, 3%, iodine, 2%. Hair tonic has about 70% alcohol.

A 70% or stronger solution of alcohol cools the skin through evaporation, and is sometimes used to bring down fever.

Alcohol kills germs and is a good skin disinfectant. It is used on the feet to prevent contagious skin conditions of the feet. It also helps prevent bed sores on bedridden patients.

Alcohol is also used for antifreeze in car radiators, solvent in paint and varnishes, plastics, cleaning solutions, cellulose products, explosives, dyes, etc. Brewery mash, a by-product, is used as cattle feed.

ALCOHOL: HOW IT'S MADE

All alcoholic beverages are produced by the process of fermentation of sugar with yeast spores. The fermentation process involves chemically altering the sugar by allowing it to mix with yeast and water several days.

The sources of sugar in the fermentation process vary for each beverage. For instance, beer draws its sugar content from malted barley, wine from fruits, whiskey from malted grains, rum from molasses, and tequila from cactus.

Alcoholic beverages such as beer and wine are the result of this fermentation process. They do not have to undergo any further processing.

Beer is developed from a mash of cereal and water. The mash is boiled, then cooled; the cereal is a starch and must be converted to sugar by a process called malting. The mixture is allowed to stand at controlled temperature after which it is referred to as "wort." Another grain, hop, is added to provide the typical beer taste. The mixture is boiled again, then filtered and cooled. Yeast is then added to begin the fermentation. After this has taken place, the sediment is strained out and the final product is ready. Bottled beer is usually pasteurized before being marketed, while draft beer is not.

Wines, as stated, are made from fruit juices. Dry wines have only slight traces of sugar in them following fermentation. The sweet dessert wines need some concentrated form of alcohol added to keep the extra sugar from fermenting (fortified wine).

While the fermentation process is essential to all alcoholic beverages, hard liquors (whiskey, gin, vodka, etc.) result from the further concentration of the fermented alcohol by a process called distillation.

Distillation occurs when the fermented brew is boiled, changed to a vapour, passes through a cooling tube and is condensed back to a liquid. The alcohol is in a more concentrated state because it boils at a lower temperature than water and therefore is removed by vaporization, leaving the water content behind.

The alcoholic concentration in beverages becomes clearer when these processes are understood. For instance:

- Most American beers contain 4% alcohol per unit volume.
- Dinner wines generally are 10% to 12% alcohol per unit volume.
- Dessert wines range from 17% to 22% alcohol per unit volume.
- Distilled beverages range from 40% (80 proof) to 50% (100 proof) alcohol per unit volume.

Per unit of volume refers to the fact that, for instance, in a twelve-ounce can of beer, only four percent of the total volume of that can is pure alcohol.

The term "proof" arose from an old purchaser's practice of examining the alcohol concentration of whiskey to avoid being cheated.

A buyer would moisten his gunpowder with whiskey and try to light it. If the dampened gunpowder burned, he knew the whiskey was not watered down and labeled it 100 proof.

While the method of identifying proof has changed, the term has remained. "Proof" strength is double the alcohol percent. 100 proof is 50% alcohol.

ALCOHOL: BEHAVIOR IN THE BODY

The Local Effects of Alcohol

Before we get into the behavior of alcohol inside the body, let's see how it behaves externally.

If you were to apply alcohol directly to tissue cells, it would precipitate and dehydrate the protoplasm. In such direct contact it would be very damaging. But applying alcohol locally is not harmful because the upper skin is dead, so it serves as a protective mechanism.

But in the case of a wound or a break in the skin, the sting of the alcohol means that you're getting to live tissue, that you are irritating and damaging some cells. Now, properly used, alcohol can have a beneficial effect locally, as an antiseptic and as an astringent. In concentrations of 60 to 90 percent alcohol, it is a very good antiseptic for cleansing wounds and destroying bacteria. In the case of hemorrhoids, which is an extrusion of anal sphincter tissue, the dehydrating (astringent) effect of an alcohol pack will tend to constrict and draw the tissue back up.

There are two situations in which the irritating effect of alcohol can be used to advantage. The irritant effect of rubbing alcohol gently into the skin will bring warmth to the area because of the stimulated vascular flow. This type of "rubifacient" action can relieve sore or stiff joints. Another instance is that in which a person about to faint may be revived with a sip of brandy. The irritating effect of alcohol on the mucous membranes sets up a reflex action that stimulates the heart, so that the blood pressure is increased.

Another beneficial local effect results from the fact that alcohol evaporates very quickly, which produces a cooling effect. That's why an alcohol bath is often used to lower the temperature when a child is running a high fever.

Behavior in the Body

While it has some properties that qualify it as a food, alcohol behaves differently from most foods. Similarly, though it is also a drug, alcohol behaves differently from most other drugs.

Our primary interest in the strange behavior of alcohol has to do with its effects on the nervous system. However, if we are to understand not just <u>what</u> happens, but <u>how</u> and <u>why</u> it takes place, we first need to trace the peculiar behavior of alcohol as it moves through the digestive system, its absorption into the blood, and the metabolism in the liver, before we consider its effects on the nervous system.

Alcohol and the Digestive System

First, a quick rationale and sketch of the digestive system.

In such complex multicellular bodies as humans, a digestive system is necessary in order to transform foods into substances that are able to diffuse into the blood stream, and then to all cells in the body. The digestive system consists of the:

Alimentary Canal	and the	Accessory Organs
Esophagus		Salivary Glands
Stomach		Tongue
Small Intestine		Pancreas
Large Intestine		Liver

The path that food travels through the digestive system or the gastro-intestinal (GI) tract is a coiled and twisted channel that winds and bends for almost 30 feet from the esophagus to the anus.

The Beginning: Digestion starts, without any conscious direction on our part, immediately as food enters the mouth. As the teeth grind, the saliva lubricates and the tongue guides the food down the throat to the esophagus, the carbohydrates start to break down, and the tortuous ride through the GI tract has begun.

The food is already finely chopped up, but needs help to be moved along. The nerve ends of the esophagus set up constriction waves (peristalsis), forcing the food toward the stomach.

In the Stomach: Here hydrochloric acid and the enzyme pepsin begin to break down the protein, forming simpler materials which will soon become amino acids. The gastric emptying time takes about two to four hours.

Wild Intestional Ride: After being chewed, churned, and covered with digestive juices, the food is off on a four to eight hour ride through the small intestine.

Acid added in the stomach stimulates hormones neutralizing the acid and permitting the enzymes to break the food down further.

Millions of practically microscopic fingers (villi) stir the solution and transfer the most usable nutrients into the blood and lymph systems. Not until now, when it is ready to proceed through the colon (where what is left will remain for ten to twelve hours) is the food in the form of substances able to be absorbed into the bloodstream.

Alcohol Drops Out: All the foods have made the several hours long roller coaster ride -- all except one, alcohol, which in this respect is radically different from other foods.

Alcohol does not go through the digestive process. It is not acted upon by any of the enzyme systems. It is not broken down. It is rapidly absorbed out through the stomach walls into the blood. Whatever alcohol gets to the small intestine is absorbed even faster. In other words, the very same chemical entity that enters the stomach as alcohol is able to penetrate the membranes and move as a molecule intact into the blood vessels.

Absorption: Since the blood carries it to the brain, it is this very rapid absorption of alcohol into the blood that accounts for the almost instantaneous effect on the central nervous system. Taken orally, drugs other than alcohol do not have such immediate effect, because most other drugs take a long time to be absorbed into the blood.

Alcohol may be absorbed into the blood from any part of the intestinal tract, but in order for it to do so, the alcohol must be in contact with the outside membrane. Therefore, anything which keeps the alcohol from this contact delays absorption. So the advice, "don't drink on an empty stomach," has some basis in the body chemistry. If the alcohol has some food to mix with, it will delay contact with the membrane surface. Similarly, diluting the drink, or consuming a substance like butter or milk which coats the stomach lining, will tend to delay absorption.

Alcohol in the Blood

The key to understanding levels of alcohol as they affect the central nervous system is not in the quantity consumed but in the concentration of alcohol in the C.N.S. and in the blood, where it can be measured. For example, 10 cc of a very strong acid in a pint of water has a much higher acidic concentration than the same 10 cc in a gallon of water. Similarly, four ounces of alcohol in a man who weighs 100 pounds would have a more pronounced effect than four ounces in a man of 200 pounds. (This is also true for women).

The analogy needs to be clarified. The body is about 80 percent water, and alcohol being chemically quite similar to water, tends to follow the water, which is fairly uniformly distributed throughout the entire body tissue. The blood level in the 100 pound man with four ounces of pure alcohol would measure 0.30 milligrams percent. Other factors constant, the same four ounces in the 200 pound man would measure 0.15 milligrams percent.

Alcohol and Metabolism

When it comes to drugs, we are naturally concerned with what they do to the body, but in the case of alcohol, the body does something to it, which is very important to our understanding.

Practically all (90 to 99 percent) of the alcohol taken into the body is consumed, oxidized in the metabolism that mostly takes place in the liver. Although most drugs go through some form of metabolic change, only alcohol directly enters the energy-supplying system of the body. Now, what is so important about this unique behavior of alcohol?

Oxidation Means Energy

In the process of being metabolized, the oxidation releases energy at the rate of seven calories per gram of alcohol. Just one shot of alcohol (16 grams) equals over 100 calories. It is this production of energy which is alcohol's one claim to being a food. But it is also a major problem for the alcoholic.

Because alcohol requires no digestion, it is a quick source of energy. Other than that it has no nutrient value. It provides no vitamins, no minerals, no proteins.

The alcoholic generally combines other quick energy foods, such as popcorn and sweets with the alcohol. By sustaining the energy levels in this way, the alcoholic deceives herself/himself nutritionally. That is, the body is deprived of the nutrients absolutely necessary to health, and the alcoholic may not be aware of it. Thus the alcoholic often develops nutritional deficiencies that may lead to serious disease.

Steady State Metabolism

In most other foods, the metabolic process tends to keep up with the intake. The more the body has to metabolize, the faster the biochemical reaction. Not so with alcohol. It requires about one hour to oxidize, to break down 8 grams of alcohol, and this rate of metabolism does not change.

One shot of alcohol(16 grams) takes two hours to completely metabolize. If a person were to wait two hours before having another drink, she/he would not feel the effects. But if a person has two or three shots in an hour, more than the body can metabolize, then we get accumulations of alcohol which effect the central nervous system.

Effects on Different Organs of the Body

Heart: Alcohol affects the heart in a way that may keep it from beating properly.

GI Tract: Alcohol also irritates the intestinal tract, causing nausea, vomiting, and diarrhea. Many people have a drink before meals because it really does whet the appetite by stimulating gastric secretions. In moderation this works all right, but with chronic use the irritation inflames the intestinal tract, which may contribute to the production of ulcers.

The Liver: Normally, after a meal, large vacuoles filled with fat appear on the liver. After some hours they are consumed in the biochemical process, and that's that. However, because of nutritional deficiencies the chronic user of alcohol cannot manage these fat vacuoles over a period of time. So they accumulate, and this results in a fatty deterioration of the liver, leading to cirrhosis, which is a major cause of incapacitating illness and premature death in alcoholic persons.

The Kidneys: The major effect of alcohol on the kidneys is diuretic, that is, a loss of body water. This happens in two ways. One way results from alcohol's depressing the release of the pituitary hormone ADH, whose function is to conserve body water. By decreasing the amount of this pituitary hormone, the body water is decreased. Secondly, while the intake of fluid adds water, when it leaves the body it draws with it additional ions, which in effect means an additional loss of water.

ALCOHOL AND THE CENTRAL NERVOUS SYSTEM

When people take a drink "to get relief or relaxation, to ease tension, or to get rid of anxiety," they are expressing how they experience changes, which also have a physiological basis in the central nervous system.

The physiological changes in the nervous system are due to alcohol's primary, actually, its only effect, as a depressant. Alcohol qualifies pharmacologically as a "general anesthetic." That's what general anesthetics do: they depress the central nervous system. And, the higher the dosage, the deeper the depression. The reason that alcohol is not used medically as a general anesthetic agent is that the dosage adequate for anesthesia may cause respiratory and circulatory collapse. It's just too dangerous.

Route of Alcohol in the Nervous System

Alcohol does not simultaneously depress **all** centers of the nervous system.

Alcohol's numbing effect begins at the upper part of the brain, the cerebrum. First to be affected are the forelobes, resulting in decreased ability to reason and make judgments.

Alcohol next reaches the cerebellum and the reticular activating system. The result is emotional instability, slowed responses, impaired vision, and poor coordination. Moving downward it skips the medulla, depressing the spinal cord, which is the principal nerve conducting path to and from the higher centers.

The last area to be affected is the medulla, in which are the primary controls for respiration and the heart, as well as certain reflex centers.

Depressing the Nervous System

The area of the nervous system to be the most immediately and deeply depressed by alcohol is the cerebrum, where the kind of critical thinking connected with anxiety takes place. What in the drinker's awareness is experienced as excitement or stimulation may be looked upon as a release phenomenon of the highest brain functions.

There seems to be some kind of contradiction in terms. How can alcohol be a depressant and a release phenomenon at one and the same time?

It does seem to be a language problem. Perhaps we think of depression only as repression. That would be incorrect, because the depressing effect upsets the physiological function, whatever it may be. If the function of a given center (such as the Reticular Activating Center) is to control certain activity, then the depressing effect will be to release controls. If the function of a given center, such as the vomit center, is to stimulate vomit, the depressant effect will be to repress the vomit.

Therefore, when we talk about depressing a given area in the central nervous system, it can mean either releasing or repressing a particular activity. Since every center in the nervous system performs some function that is natural and necessary to a human organism, what is more to the point is that alcohol upsets the necessary functions of the nervous system.

What takes place, and when, helps us to understand more clearly alcohol's effect on the nervous system.

Reticular Activating System

Newer research points to an important area below the cortex and above the spinal cord, which acts as a balancing and integrating system. One of many integrating systems that enable us to bring the various senses into balance, the R.A.S. integrates impulses coming up the spinal cord with impulses coming down from the cortex.

When this system is depressed, in the early states of drinking, once again it may be experienced as stimulation and freeing of inhibitions, because the impulses coming up to the cortex are free-floating. The intensity of unintegrated sound and vision impulses, of sensory awareness generally, may be heightened.

What is pleasing to the drinker is at the same time depriving her/him of an important integrating system in the nervous system. Just to reach down and pick something off the table becomes a problem, because it involves coordinating eye and hand activities. Changes in mood and emotional states may occur abruptly, because these controlling systems too are lost.

Two Safety Valves Lost

We have been talking about centers in the nervous system whose normal function is to integrate and control activity. Alcohol has the effect of opening the control gates.

There are two centers whose normal role is to stimulate activity. One of these is the vomit center and the other is the respiratory center. When they are working right they act as control or safety valves. If the body takes in something injurious, the vomit center is stimulated to get rid of it. But after a few drinks of alcohol, the vomit center becomes depressed, the person goes on drinking, without the interferences of the vomit defense mechanism.

Another, and more serious safety valve which is undermined by alcohol, is the respiratory center in the medulla. When we climb a mountain or do some other concentrated heavy work, our rate of breathing increases dramatically. We've gotten the signal to slow down. That's a function of the respiratory center. When a person is drinking, this is one of the last centers in the nervous system to become depressed. That means that someone can practically drink herself/himself to death.

Tolerance

There is some confusion as to whether drinkers develop a tolerance for alcohol. Biochemically, that is, in terms of the body's capacity to metabolize alcohol, there does not develop any tolerance. A person who has been an alcoholic for ten years metabolizes alcohol at 8 grams per hour, exactly the same as the person who took her/his first drink today.

And yet, there are people who can drink alot of alcohol, and it doesn't seem to affect them.

One way to understand this tolerance is as an adaptive or a learning mechanism. Alcoholics may learn how to operate under the influence of the drug. The novice drinker, with no sense of her/his boundaries, may make a fool of herself/himself at a party. But the experienced drinker may have "learned" how to manage within the familiar terrain of her/his drunken state.

It is also probable that the physiological reaction of the person addicted to alcohol is changed. This applies to all cells of the body, but particularly to those of the brain cells. They act as if they have become adapted to alcohol, so that alcohol assumes the characteristic of a foodstuff required by the cells.

Effects of Alcohol on Sleep

The effects of alcohol on sleep are known to anyone who went to bed having had too much to drink, only to toss and turn fitfully, "headachey" and worn out the next morning. There is a stage in the night's sleeping cycle, called REM, or dreaming sleep. Taking several drinks before bedtime decreases the amount of REM sleep. There are indications that the greater the amount of alcohol, the more prolonged is the block in REM sleep. The usual consequences of being deprived of REM sleep are impaired concentration and memory, as well as tiredness, irritability, and anxiety.

DRINKING AND DRIVING

The driving task is often thought of as a relatively simple operation, but actually requires a very complex coordination of hands, feet, eyes, and ears with a continuous series of decisions about what we see, hear, and feel in relation to a variety of factors like: road condition, traffic signs, other cars and drivers and even our own car's performance.

Interestingly, the average driver makes about twenty major decisions for each mile driven and each one of them requires a complex, semi-automatic coordination between decisions and actions that must take place in less than one-half second. These decisions based on what a driver senses, identifies, predicts,and ultimately executes are the substance of the driving task.

What effect does alcohol have on the driving task?

Alcohol has a depressing effect on the Central Nervous System. Alcohol

- stimulates overconfidence by depressing centers of inhibitions;

- impairs judgment, coordination, comprehension, vision;

- retards eye movement; and

- slows down reaction time.

If we know this, why do people still drink and drive?

Most of us don't know this, but even if we do, it is difficult to control our behavior because when we start drinking the first area of our brain to be affected is the reticular activating system which is the center of our inhibitions. Normally, our inhibitory center tempers and partially controls our strong emotional drives. But the center of our emotions is the hypothalmus located deep within the brain stem and it is not affected by moderate drinking. As a person begins drinking, his reticular activating system becomes desensitized, and emotional reactions such as anger or fear meet with no strong inhibitory control. Alcohol inspired overconfidence usually results.

How does alcohol affect the driving task?

Shortly after the reticular activating system malfunctions, the left front portion of the cerebral cortex becomes impaired. The cerebral cortex, the center of our reason and judgment, controls our abilities to sense, identify, predict, and make decisions.

Increased concentration of alcohol will then affect the right rear portion of the cerebral cortex causing a depressing effect on psychomotor skills and, therefore, an inability to execute the necessary coordination of motor skills with our sensory and reasoning capabilities.

How many drinks can I take before it affects my ability to perform the driving task?

As soon as alcohol reaches the brain it begins to depress the Central Nervous System. The degree to which the CNS is depressed depends upon the concentration of alcohol in the CNS. While the actual effect of alcohol depends in part on a person's body weight, size, body fluids, amount of food in stomach, and psychological makeup, the general effect can be predicted.

An average 150 pound man, for example, consuming one bottle of beer or a cocktail begins to experience a feeling of relaxation, his skin becomes flushed, he feels warmer, and his inhibitions are lessened. The amount of alcohol in his blood is two milligrams per 100 ml. of blood.

With 2 - 3 drinks, his judgment becomes affected due to loss of inhibitions. He becomes less responsible for his actions. His coordination is slightly off,but his confidence in his own abilities increases while his actual ability decreases. His blood-alcohol(BAL) level now is .04 and his risk of having an accident is two times greater than normal.

With 5 or 6 drinks, his vision becomes blurred, speech and balance are affected,and reaction time is considerably slowed. Blood-alcohol (BAL) is now .10 and the chances of an accident are 10 times greater than normal.

With about 8 drinks, he'd be staggering and seeing double. Blood-alcohol (BAL) concentration is now .16 and the probability of an accident is 25 times greater than normal.

As he increases his consumption to 15 - 20 drinks, the blood-alcohol level (BAL) shoots up to .40. His skin becomes clammy, his pupils are dilated and he is on the verge of unconsciousness. His chances of an accident are extremely high --- if he can even manage to start his car.

After 20 drinks, the blood-alcohol level (BAL) concentration reaches .50 and alcoholic poisoning and death are likely to occur. This blood-alcohol concentration can be measured in several ways: by chemical tests of the breath, blood, urine, or saliva.

Because a doctor is required to obtain the blood, urine and saliva for testing, the most common form of measurement is by the breathalyzer -- an instrument that is located at every State Police unit and most towns, villages, and municipalities in New York State. The breathalyzer works on the principle that there is a constant relationship between the amount of alcohol in the blood and the amount of alcohol in deep lung air.

This is an accurate way of measuring whether a driver is impaired or intoxicated due to alcohol, but by law, it must be administered within two hours from time of arrest.

New York State's laws relate directly to blood levels. For instance -- if your blood-alcohol level is found to be .08 you can be found guilty of driving while ability impaired (DWAI) which is a traffic infraction.

If your level is .10 in New York State, you are driving illegally (per se offense), and you may be found guilty of "driving while intoxicated," DWI, either of which is a misdemeanor. Conviction on either of these counts can result in a fine of up to $500 and/or a year in jail. The second offense within 10 years is a felony and can result in a fine of $200 - $2,000 and/or 60 days to two years in jail.

Failure to submit to a chemical test results in revocation of license or permit. The reason for this is the concept of "implied consent." When you sign your driver's license or permit you are automatically implying you will obey the vehicle and traffic laws, including submitting to a chemical test.

Who are the drinking drivers?

One report indicates that roughly 80% of those convicted of DWI are social drinkers; the other 20% are the problem drinkers or alcoholics.

Heavy drinkers and alcoholics account for only about 7% of all alcohol-related accidents, but are responsible for approximately two-thirds of alcohol-related traffic deaths. The other one-third is caused by the social or moderate drinker.

Somewhat confusing? . . . We agree.

Since social drinkers as well as alcoholics are obviously causing many accidents and deaths, a more understandable term might be "problem drinker." "Problem drinkers" have a high BAL and show a history of alcohol problems such as previous arrests, hospitalization, and social agency contacts.

The problem drinker is about one out of ten -- another statistic that may be confusing until we relate it to actual numbers -- eight million registered drivers have a drinking problem out of a total population of 114 million.

What's being done?

The problem drinker who gets behind the wheel of a vehicle presents us with a two-fold problem:

- He or she is a threat both to herself/himself and to us.
- Every countermeasure program has failed to significantly reduce the rate of return of its participants.

While the first point is quite obvious, the second should leave us with many questions.

If we examine the countermeasure programs, they can be seen as having two basic forms: pre-licensing and post-licensing.

In the former, little detail is spent, while the post-licensing programs have taken various approaches, among them:

-One-on-one interviews,

-Small and large group lectures, and

-Counseling sessions.

Unfortunately, even in the most successful program the rate of return climbed back to normal after only two months.

The underlying problem in all of these programs seems to be the inability of the participants to take the first step and admit they have a drinking problem.

Environmental Chemicals

Society today must learn to live within a vast chemical environment; careful consideration, however, must be given to the benefits of chemical use and the risks involved with their use. Modern chemicals have improved our lives, provided many of our conveniences, but have posed many problems with poisoning, pollution, and environmental hazards.

Food additives, cosmetics, pesticides, cleaning agents, etc. are commonly used in today's society. These are the environmental chemicals that are a part of the air we breathe, water we drink, food we eat, and clothing we wear. Many are purposefully added to provide us with the modern life society expects; others are an inadvertent contaminant in the chain of modern technology. When properly used and stored, they provide benefits; however, misuse and improper storage can lead to problems.

Artificially adding substances to natural foods to enhance their taste or appearance, or to improve the edible life of foods, dates back to early times. Drying, salting, pickling, and smoking foodstuffs was invaluable, almost to survival. Even the ancient Egyptians used artificial colors to enhance the appearance of their foods. But we are no longer of an age where adding salt to our meat keeps us alive through the winter season. Nearly all of our modern food has been purchased at the local supermarket; it has been refined, polished, processed, preserved, emulsified, flavored, colored, and, in general, altered. The rate of additive consumption is rising. Recently, the sale of processed foodstuffs to the American public outstripped the sale of unprepared foods. The rise comes primarily from our nation-wide distribution of foods, requiring extensive preservative additives and the rise in the sale of convenience or prepared foods.

The Food Protection Committee defines food additives as "a substance or mixture of substances, other than a basic foodstuff, which is present in a food as a result of any aspect of production, processing, storage, or packaging." This definition covers both intentional additives, which are substances added purposely for a specific function and incidental additives, which have no function in the finished food, but have become a part of the food product through some phase of processing, packaging, or storage.

There are approximately 3000 food additives in use; they may be grouped into five broad categories: flavors, colors, preservatives, texture agents, and miscellaneous.

The flavoring agents are the largest group of food additives. Some natural flavorings are used in processed foods, but by far the bulk of flavoring is done by utilizing complex chemicals to imitate various food flavors.

Coloring agents are used to enhance the appearance of food. If you have ever tried to drink green grape soda (it will turn green if left in sunlight), you can understand the importance of color in making food attractive. Many of the colors used in food are termed "coal-tar dyes," and contain tar as do cigarettes. Many of the dyes have been banned from use (F.D.C. Red No. 1 and 2, Green No. 1 and 2) that had previously been used in foods; other dyes are limited only to specific foods at specific tolerances (the red in maraschino cherries and the black in black olives, for example).

The World Health Organization estimates that approximately 20% of the world supply of food is lost through spoilage; preservatives are valuable in preventing the loss of food before it reaches the market. Sodium diacetate, acetic acid, and lactic acid are often used in bread to prevent spoilage. Servic acid and its salts prevent mold growth in cheese, syrups and confections with fruit or sugar; benzoic acid is used in margarine, fruit juice, fruit concentrates, and pickled vegetables.

Texture agents include emulsifiers, stabilizers, and thickening agents. They give food texture and body by combining substances that would not naturally combine with each other, such as vinegar and oil. Texturizers give the product uniformity and even consistency. The most common emulsifiers are stearyl tartrate, mono and diglycerides, monostearin sodium sulfoacetate. The thickening agents are natural agar, alginated celluloses, starches, vegetable gums, dextrins, pectin, and methyl cellulose.

Additional additives include bleaches, anti-caking agents, firming and crisping agents.

The government through the Food and Drug Administration and the Department of Agriculture maintains surveillance of food additives. Federal Law (Delaney Clause) forbids the use of a proven cancer-causing chemical as a food additive. However, many people (for example, Ralph Nader) are concerned that a harmful chemical may find its way into our food as a food additive.

Cyclamate was a food additive that at one time was on the Food and Drug Administration's GRAS list (Generally Recognized as Safe). After several years of controversy and study, cyclamate was removed from the market as a potential carcinogenic agent.

At the present time, several food additives are under study in attempts to determine their relative safety for continued use in prepared foods. Recent evidence has suggested that food additives are involved in the production of hyperkinetic behavior in some children. Placing these children on a diet free of additives has improved their behavior in certain cases.

Cosmetics include soaps, shampoos, deodorants, hair sprays, hair dyes, lipsticks, body lotions, etc. and are used daily by most Americans. Society is very concerned about appearance and goes to extremes to look and smell good. Over-use of cosmetics may cause skin or eye irritations. Certain individuals are allergic to chemicals used in soaps and must use special brands that do not contain all the chemical additives. Children like to imitate adults especially when it comes to beautifying themselves. A child's skin is very sensitive and if cosmetics are not properly stored, away from young children, serious injury may occur. Children have been killed by spraying hairspray into the respiratory system. The Food and Drug Administration has the responsibility to insure that cosmetics are properly labeled and are reasonably safe when used as directed.

Pesticides are useful tools that have enabled the American farmer to produce the vast harvests and to feed so many peoples in the world. Insects and vermin can destroy vast amounts of valuable food and fiber if left unprotected. Recent years have seen great concern on the parts of various groups about the indiscriminate use of pesticides and the damage that pesticides are capable of producing in the environment.

Dichlorodiphenyltrichloroethane (DDT) use has been greatly restricted by various governmental controls. DDT belongs to a group of chemicals known as chlorinated hydrocarbons. Public concern about DDT centers on the residual quality of the chemical and its ability to concentrate in fatty tissues. The residual quality of DDT is a characteristic which makes the compound desirable as a pesticide; its solubility in fat tissue permits it to be passed along the food chain.

Newer pesticides (organophosphates and carbonates) do not remain in the soil or on plants for long times, nor are they as easily passed along the food chain as DDT. However, many of these newer chemicals are highly toxic, and human and animal exposure must be avoided. Pesticides must be properly stored and used as directed. The Food and Drug Administration and the Department of Agriculture regulate the labeling and use of pesticides in this country.

Cleaning agents, detergents, soaps, shampoos, disinfectants are common household items that poison many children each year. Adults all too frequently store such chemicals in easy reach of young children. The bright labels and colored liquids attract children to touch, open, and ingest. Cleaning agents are valuable in reducing germs and the spread of disease but must be respected for the strong chemical agents that they are. Proper use and proper storage are a must for adults. Labels and directions for use should be read and heeded. Children must learn and must develop a proper respect for chemicals stored in their homes.

Chemicals in our environment are invaluable and have provided us with the life society enjoys, but society must respect and use the chemicals as they are intended and not misuse them or the results could be serious.

-CHAPTER V-

TEACHING RESOURCES

ALCOHOL RESOURCE LIST

(Annotated)

-Journals and Periodicals-

Davies, John and Barrie, Stacey. "Alcohol and Health Education in Schools," *Health Bulletin*, 29 (1): 50 - 53, 1971.

This article reviews the current status of alcohol education, giving consideration to the objectives of alcohol education and how they may be implemented.

_____. *Journal of Alcohol Education*. Published three times a year by the education section of the North American Association of Alcoholism Programs.

"It reports teacher experience and experiments and provides a reference resource for actual teaching materials, techniques, and procedures; it also is concerned with reporting new, effective, and exciting programs of education more appropriate to the community, the church, and the family."

Subscriptions and general inquiry:
Ralph Daniel, Journal Executive
Journal of Alcohol Education
3500 North Logan
Lansing, Michigan 48914

Kreyes, Wilhelm. "Drug Abuse, Self Abuse and Abuse of Authority," *Canadian Psychiatric Association Journal* (Ottawa), 15 (3): 330 - 331, 1970.

Society's ambivalence toward intoxicants, particularly alcohol and marijuana, is discussed as a major problem in educating young people regarding the use of drugs.

Listen

An attractive magazine, published monthly, presenting the non-use of alcohol and narcotics as the "In Thing" for young people.

Available from:
American Temperance Society
6840 Eastern Avenue, N.W.
Washington, D.C. 20012

Morelli, Louis V. "Drug Education Training Program." *Journal of the Florida Medical Association*, 58 (4): 25 - 27, 1971.

The Florida Drug Education Training Program, for all children from kindergarten through grade 12, is training teachers in current information and knowledge of harmful drug effects, and providing education courses in drug, tobacco, and alcohol abuse.

Quarterly Journal of Studies on Alcohol. Mark Keller, Editor.

The *Quarterly Journal* is published in March, June, September, and December. It publishes reports of research from all scientific fields.

Available from:
Rutgers Center of Alcohol Studies
Rutgers University
New Brunswick, New Jersey 08903

Stacey, Barrie and John Davies. "Drinking Behavior in Childhood and Adolescence: An Evaluative Review," *British Journal of Addictions*, 65 (3): 203 - 212, 1970.

An evaluative review of various aspects of teenage drinking is presented.

-Books and Manuals-

A Dictionary of Words about Alcohol by Mark Keller and Mairi McCormick (1969)

Authoritative but not authoritarian definitions of all the important words and terms (over 1700 terms) related to alcohol and alcohol problems. The origin and meaning of the words are given along with preferred usage.

Available from:
Publications Division
Rutgers Center on Alcohol Studies
Rutgers University
New Brunswick, New Jersey 08903

Alcohol and Alcoholism

Produced by the Public Information Branch, National Institute of Mental Health, National Center for Prevention and Control of Alcoholism, Chevy Chase, Maryland 20203 (1967), 73 pp. (Excellent bibliography).

Available from:
Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402

Ames, Maurice. *Choose For Yourself - You and Alcohol.* New York: Random House, 1970, pp. 90.

One of a series. A forthright explanation about alcohol and its effects which lead an individual to decision about its use.

Ayers, Albert L. and Gail Gleason Milgram. *The Teenager and Alcohol.* New York: Rosen Press, 1970, pp. 96.

Excellent compendium and critique of present knowledge about alcoholism. Thirteen authorities contributed chapters dealing with six main parts of the alcohol question.

Bacon, Margaret and Mary B. Jones. *Teenage Drinking.* New York: Thomas Y. Crowell Co., 1968, pp. 228.

A presentation of research on drinking as it applies to the adolescent and his parents. The authors dispel myths regarding alcoholic use by adolescents and discuss concerns that are real: the historical role of drinking, legal implications of teenage drinking, use of alcohol in other nations, and pathological drinking.

Fort, Joel. *The Pleasure Seekers, The Drug Crises, Youth and Society.* New York: Bobbs-Merrill Co., 1969, pp. 255.

Contains accurate and concise information on the history, consumption, sale, and effects of alcohol and on the relationship of alcohol abuse to accidents and crime. It also deals explicitly with alcoholism. The book is of particular value because its over-all subject is the use of drugs in society with particular emphasis on the use of drugs by young people. Alcohol is included appropriately and in context.

Mann, Marty. *Marty Mann Answers Your Questions About Drinking and Alcohol.* New York: Holt Rinehart and Winston, 1970, pp. 112.

Information about alcohol, adolescent experiences with alcohol, alcohol education and implementation of alcohol education in curriculum are presented. Nature and effects of alcohol are thoroughly discussed as well as extent and problems of problem drinking and alcoholism.

Milt, Harry. *Basic Handbook on Alcoholism.* Maplewood, New Jersey: Scientific Aids Publication, 1969.

A well-written, well-documented history of temperance activities from colonial times to the present.

Notes on Alcohol Education for Teachers (1967).

Bulletin 371, published by the Department of Education and Department of Public Health Alcoholism Program, Lansing, Michigan.

Available from:
State of Michigan
Department of Public Health
35 North Logan
Lansing, Michigan 48914

Todd, Frances. *Teaching About Alcohol.* New York: McGraw Hill, 1964.

Factual material on alcohol (i.e., psychological effects, role of the alcohol beverage industry, teenage drinking and problem drinking are examined).

United States Department of Health, Education, and Welfare. *Alcohol and Health.* Washington, D.C.: U. S. Government Printing Office, 1972.

A thorough presentation of the extent and patterns of alcohol use and abuse in the United States, including a chapter on the causation and treatment of alcoholism.

-Pamphlets-

A Guide to Audio-Visual Material on Alcohol and Alcoholism. Rockville, Maryland: National Clearinghouse for Alcohol Information, 1973. (Xerox). Copies available from NCALI.

The availability and audience level of 51 films on alcohol use and abuse is given, with a synopsis of each.

Curriculum Guides for Primary and Secondary Levels in Alcohol Education. Rockville, Maryland: National Clearinghouse for Alcohol Information, Revised 1973. (Xerox). Copies available from NCALI.

Curriculum Guides, specified for primary and secondary alcohol education are compiled and annotated. Publishers, Addresses, and prices are included.

It's Best to Know...About Alcohol. Prepared by the Alcoholism and Drug Addiction Research Foundation of Ontario, Canada. (A cartoon-type booklet, 32 pp.)

Distributed in the United States by and available from:
National Alcoholic Beverage Control Association, Inc.
Suite 1610
5454 Wisconsin Avenue, N.W.
Washington, D.C.

Michigan Alcohol Education Foundation

An extremely popular series of pamphlets at reasonable prices.

Available from:
Michigan Alcohol Education Foundation
Box 212
Lansing, Michigan 48902

Rutgers Center of Alcohol Studies

Located at Rutgers University, the Center of Alcohol Studies has literally become the nucleus of research, information, and teaching in the area of alcohol studies for the western world.

Publications Division, Rutgers Center of Alcohol Studies
Rutgers University
New Brunswick, New Jersey 08903

Thinking About Drinking. Prepared and produced by the Children's Bureau and the National Institute of Mental Health.

The pamphlet was prepared for young people as a basis for discussion of attitudes about drinking.

Listed as Public Health Service Publication No. 1683, Children's Bureau Publication No. 456.

Available from:
Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402

What Everyone Should Know About Alcoholism. (1969 ed., 15 pp.)

A unique combination of words and graphics are featured in this pamphlet, presenting the major facts about alcoholism.

Available from:
Channing L. Bete Company, Inc.
45 Federal Street
Greenfield, Massachusetts 01301

What Happened to Joe and His Drinking Problem. 1971, pp. 26. Prepared by Alcoholics Anonymous.

This pamphlet is concerned with the effects of habit-forming drugs on alcoholics. It stresses that those who are alcoholics may also be prone to addiction to other drugs. Comic book format.

Available from:
Alcoholics Anonymous World Services, Inc.
P. O. Box 459
Grand Central Station
New York, New York 10017

-Audio-Visual Materials-

Audio-Visual Materials on Alcohol and Alcoholism. (1974 Edition, 34 pp.)

A list of films dealing with alcohol abuse and alcoholism; includes description of content, distributor, sale and rental fees, and audience level. Dept. H.E.W. Publication No. (ADM) 74 - 32.

Available from:
National Clearinghouse for Alcohol Information
P. O. Box 2345
Rockville, Maryland

Education Media Council. "Educational Media Index," McGraw Hill Book Company, Inc., New York, 1964.

A guide to films, phonotapes, video tapes, charts, slides, etc. Vol. 8 deals with health, safety, and home economics.

Educators Guide to Free Films, John Diffor, Mary Horkeimer, and John Fowkes, (eds.) Educators Progress Service, Randolph, Wisconsin. Annual.

Educators Guide to Free Filmstrips. John Diffor and Mary F. Horkheimer (eds.) Educators Progress Service, Randolph, Wisconsin. Annual.

Index to 16mm Education Films. National Information Center for Educational Media, McGraw Hill Book Company, New York, N.Y. 1967.

U. S. Government Films. This catalog lists motion pictures and filmstrips for sale by the National Audiovisual Center, General Services Administration, Washington, D.C. 20409

-General Sources for the Teacher-

Write to the sources listed below for catalogues and/or materials dealing with your specific topic in the area of alcohol. Most of the sources listed provide either free or inexpensive materials.

1. AL-ANON FAMILY GROUP HEADQUARTERS
   P. O. Box 182
   Madison Square Station
   New York, New York 10010

2. ALCOHOL & DRUG PROBLEMS ASSOCIATION OF NORTH AMERICA
   1130 17th Street, N.W.
   Washington, D.C. 20036

3. ALCOHOL EDUCATION FOUNDATION
   515 North 6th Street
   Springfield, Illinois 62702

   An affiliate of ILLCAAP - Illinois Church Action on Alcohol Problems.

   Materials and services available to schools, churches, and civic organizations. (Pamphlets, fiims, alcohol and narcotics-related filmstrips, etc.)

4. ALCOHOLICS ANONYMOUS WORLD SERVICES, INC.
   P. O. Box 459
   Grand Central Station
   New York, New York 10017

5. ALCOHOLISM SUBCOMMITTEE, WORLD HEALTH ORGANIZATION
   Palais Des Nations
   Geneva, Switzerland

6. ALLIED YOUTH, INC.
   Rosslyn Building
   Arlington, Virginia 22209

7. AMERICAN ACADEMY OF PEDIATRICS
   P. O. Box 1034
   Evanston, Illinois 60204

8. AMERICAN ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION, AND RECREATION
   1201 16th Street, N.W.
   Washington, D.C. 20036

9. AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
   1515 Massachusetts Avenue, N.W.
   Washington, D.C. 20005

10. AMERICAN COUNCIL ON ALCOHOL PROBLEMS
119 Constitution Avenue, N.E.
Washington, D.C. 20002

11. AMERICAN COUNCIL ON EDUCATION
One DuPont Circle
Washington, D.C. 20036

12. AMERICAN HOSPITAL ASSOCIATION
840 North Lake Shore Drive
Chicago, Illinois 60610

13. AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street
Chicago, Illinois 60610

14. AMERICAN PHARMACEUTICAL ASSOCIATION
2215 Constitution Avenue, N.W.
Washington, D.C. 20037

15. AMERICAN PUBLIC HEALTH ASSOCIATION
1015 Eighteenth Street, N.W.
Washington, D.C. 20037

16. AMERICAN SCHOOL HEALTH ASSOCIATION
ASHA Building
Kent, Ohio 44240

17. HEALTH AND WELFARE DIVISION, METROPOLITAN LIFE INSURANCE COMPANY
One Madison Avenue
New York, N.Y. 10010

18. LICENSED BEVERAGE INDUSTRIES, INC.
155 East 144th Street
New York, N.Y. 10017

19. MENTAL HEALTH MATERIALS CENTER
419 Park Avenue, S.
New York, N.Y. 10016

20. MICHIGAN COUNCIL ON ALCOHOL PROBLEMS
728 West Allegan
Lansing, Michigan 48902

21. NATIONAL CENTER FOR PREVENTION AND CONTROL OF ALCOHOLISM
National Institute of Mental Health
5454 Wisconsin Avenue
Chevy Chase, Maryland 20203

22. NATIONAL COUNCIL ON FAMILY RELATIONS
1219 University Avenue, S.E.
Minneapolis, Minnesota 55414

24. NATIONAL SAFETY COUNCIL
425 North Avenue
Chicago, Illinois 60606

25. NATIONAL TRANSPORTATION SAFETY BOARD
Department of Transportation
Washington, D.C. 20591

26. NEBRASKA MASTER POISON INFORMATION CENTER
Children's Memorial Hospital
502 South 44th Street
Omaha, Nebraska 68105

27. NEW YORK STATE DEPARTMENT OF MENTAL HEALTH
Division of Alcoholism
44 Holland Avenue
Albany, New York 12208

28. NORTH AMERICAN ASSOCIATION ON ALCOHOLISM PROGRAMS
1130 17th Street, N.W.
Washington, D.C. 20036

29. RUTGERS CENTER OF ALCOHOL STUDIES
Rutgers University
State University of New Jersey
New Brunswick, New Jersey 08903

30. SCIENCE RESEARCH ASSOCIATION, INC.
259 East Erie Street
Chicago, Illinois 60611

31. SECTION ON ALCOHOLISM PROGRAMS
Department of Mental Health
401 South Spring Street
Springfield, Illinois 62706

32. SOCIETY FOR PUBLIC HEALTH EDUCATION, INC.
655 Sutter Street
San Francisco, California 94102

33. STERLING FILMS, INC.
866 Third Avenue
New York, N.Y. 10022

34. TEXAS ALCOHOL NARCOTICS EDUCATION, INC. PUBLISHERS
"Tane Press"
2814 Oak Lawn Avenue
Dallas, Texas 75219

35. THE CHRISTOPHER D. SMITHERS FOUNDATION
405 Park Avenue
New York, N.Y. 10025

36. THE WORLD MEDICAL ASSOCIATION, INC.
10 Columbus Circle
New York, New York 10019

37. UNITED STATES INDUSTRIAL CHEMICALS, INC.
60 East 42nd Street
New York, New York 10017

TEAR OUT AND USE AS ORDER FORM

NATIONAL CLEARINGHOUSE FOR ALCOHOL INFORMATION

Publications Order Form

NAME _____ TITLE OF PRESENT POSITION _____

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By checking either of the boxes below, you become a subscriber to the Clearinghouse periodical(s) described:

☐ ALCOHOL AND HEALTH NOTES. This monthly newsletter provides information and comments to a broad audience working in the field and to the concerned public. (No charge.)

☐ ALCOHOL HEALTH & RESEARCH WORLD. Intended for all professionals involved in the treatment, research and prevention of alcohol abuse and alcoholism, this quarterly bulletin provides in-depth coverage of specific topics related to alcohol. (No charge.)

The publications listed below are available in limited quantity at no charge from the National Clearinghouse for Alcohol Information. If you would like to receive a copy of any item, mark the box next to the title.

☐ ALCOHOL: SOME QUESTIONS AND ANSWERS. Several questions concerning the effect of alcohol on the body and the reasons why people drink are answered briefly. 14pp. #105

☐ FIRST SPECIAL REPORT TO THE U.S. CONGRESS ON ALCOHOL AND HEALTH. A substantial portion of the current scientific knowledge on the health consequences of using alcoholic beverages is summarized. 121 pp. #51

☐ ALCOHOL AND ALCOHOLISM. This report presents some of the highlights of modern research on drinking and alcoholism, based on technical articles published in scientific literature as well as on views expressed by leading authorities in the field. 42 pp. # 69

☐ DEVELOPING COMMUNITY SERVICES FOR ALCOHOLICS: SOME BEGINNING PRINCIPLES. This book presents specific information about alcoholism and provides a guide for communities to develop services for alcoholic persons and their families. 39 pp. #54

☐ PROCEEDINGS: SEMINAR ON ALCOHOLISM EMERGENCY CARE SERVICES. This volume of Proceedings suggests a variety of models or settings through which emergency care services can be delivered to alcoholic individuals with varying needs within communities of various resources. 98 pp. #142

☐ THINKING ABOUT DRINKING. This pamphlet was prepared for young people as a basis for discussion of attitudes about drinking. 31 pp. #101

☐ NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM. This booklet describes the program of the NIAAA which consists of research, training, development of community services and public education. A list of regional offices of the Department of Health, Education, and Welfare is included. 11 pp. # 11

☐ PROCEEDINGS OF THE NATIONAL CONFERENCE OF VOCATIONAL REHABILITATION AND STATE ALCOHOLISM AGENCY DIRECTORS. The conference was held to consider coordinated rehabilitation services for people with alcoholism. 91 pp. # 54

☐ OCCUPATIONAL ALCOHOLISM, SOME PROBLEMS AND SOME SOLUTIONS. Industrial alcoholism programs are discussed. A suggestion for a company policy statement is presented and the role of labor is also elaborated. 6 pp. # 10

NIAAA Occupational Program Consultants for the State of _____

☐ PROCEEDINGS OF THE JOINT CONFERENCE ON ALCOHOL ABUSE AND ALCOHOLISM: February 21 - 23, 1972. The major objective of this conference was to assist in the coordination of planning and programming at the regional, State and local levels to deal with the alcoholic offender, the drinking driver, and the public inebriate. 273 pp. #157

☐ THE DRINKING DRIVER AND THE POLICE. This pamphlet offers advice to the police administrator and the law enforcement officer in dealing with the drunk driver. 10 pp. #401

☐ THE DRINKING DRIVER AND THE COURTS. Alternative courses of action for judges, prosecutors, and defense attorneys to follow in dealing with the drunk driver are suggested. 12 pp. # 402

☐ YOUNG AMERICANS. DRINKING, DRIVING, DYING. This pamphlet includes information on what young Americans can do to control drinking and driving. 10 pp. # 403

☐ FIRST AID FOR THE DRUNKEN DRIVER BEGINS IN YOUR OFFICE. Written for physicians, this booklet provides information on the significant relationship between blood alcohol concentration and relative risk of crash and on the U.S. Department of Transportation's countermeasure programs. 11 pp. #404

☐ THE NATIONAL ALCOHOL COUNTERMEASURES PROGRAM. Steps for combatting drunk driving are described, including information on research and development programs, a public education campaign, State and community action programs, and Alcohol Safety Action Projects. 12 pp. #405

☐ THE PROBLEM DRINKER AND YOU. Included in this pamphlet are suggestions on what the average person can do to help stop alcohol-related traffic accidents, a list of Alcohol Safety Action Project directors, and a list of Governors' Highway Safety Representatives. 15 pp. #406

☐ GUIDE TO AUDIO-VISUAL MATERIALS. A list of films dealing with alcohol abuse and alcoholism; includes description of content, distributor, sale and rental fees and audience level. 36 pp. #151

☐ POSTERS. 14" x 17", color. Complete set of posters listed below. #88

- ☐ Alcohol Is a Drug #88.1
- ☐ If You Need a Drink to Be Social #88.2
- ☐ What Kind of Drinker Are You? #88.3
- ☐ Ten Terrific Hangover Cures #88.4
- ☐ Typical Alcoholic #88.5
- ☐ If You Drink a Lot of Beer #88.6
- ☐ Getting Drunk #88.7

☐ BUMPER STICKER. Color drawing of cocktail with the slogan "You've Got to Know When to Say When." #89

☐ DIRECTORY OF STATE AND LOCAL ALCOHOLISM SERVICES. Indicates State(s) for which you would like to receive a directory. #64_____

_____

☐ OTHER _____

Please return this form to:

National Clearinghouse for Alcohol Information
P. O. Box 2345
Rockville, MD. 20852

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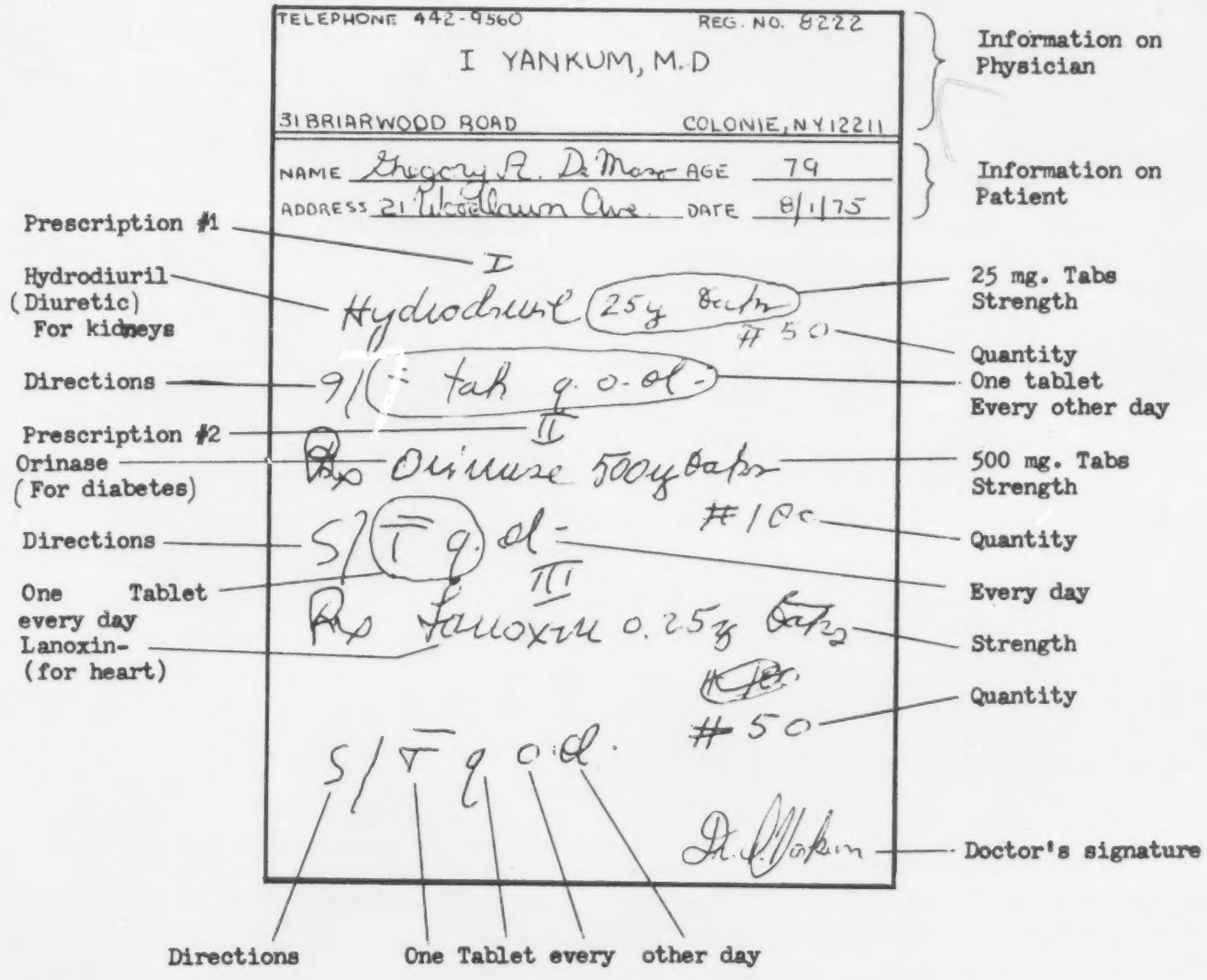
APPENDIX

A SAMPLE PRESCRIPTION

This is a sample of an actual prescription made out to a fictitious name. The prescription has three ℞'s written on it. Teachers should duplicate the prescription and have a pharmacist discuss the various parts with the class.



The word prescription is derived from the Latin prae -- *before*, and scribo -- *I write*, and, translated literally, means "that which is written before." It is the written order of a physician, dentist, or veterinarian to a pharmacist, directing him to prepare and dispense a special medicine for the use of a specific patient.

EXTRA ACTIVITIES FOR STUDENTS

MY CHECKLIST

Purpose of this checklist is to have students identify and suggest reasons for their behavior under different situations. How the list is checked off can lead to some interesting discussions.

NAME_____ GRADE_____ AGE_____ DATE_____

	Makes Me Happy	Makes Me Upset or Angry	Don't Care
Accidentally breaking something			
Sleeping late in the morning			
Being scolded, even though I didn't mean to cause trouble			
Having to say "sorry," even though I should			
Having to eat what I don't like			
Winning a game			
Being teased or called names			
Being told how nice I am			
Having someone take my things without asking			
Doing my lessons well			
Not being allowed to do what I want to do			
Being told that I have done a good job			
Knowing I have made a mistake			
Being kind to someone			
Losing a game			
Brothers and sisters being mean			
Being able to tell my troubles to someone I like			
Feeling guilty about something			

This is what I wish_____

INDIVIDUAL SAFETY SCRAPBOOK

Purpose: To evaluate the child's respect for medicines and his knowledge of "safe and unsafe" substances. When the scrapbooks are completed direct the children to take them home for their parents' comment and evaluation.

Procedure: Provide each child with four sheets of newsprint about 16" x 20" in size. Teachers will probably wish to fold these sheets in half and staple or sew them together to form a scrapbook before distributing to children. Older children may wish to do this themselves. Captions may be printed by the teacher before the material is distributed, or printed on duplicating paper for children to cut out and paste into scrapbooks under the teacher's supervision.

Sample:

Cover page:	_____'s Safety Book.
First page:	When I want something to eat I ask Mother.
Second page:	Some things are safe to eat or drink.
Third page:	Some things are not safe to eat or drink.
Fourth page:	So I ask first.
Fifth page:	Lock up unsafe things.
Sixth page:	Help keep baby safe.
Seventh page:	Safe? Not safe?
Eighth page:	Protect your Family Against Poisoning.

Appropriate pictures clipped from women's and home magazines can be used in preparing the scrapbook. Each child should be supplied with a picture of "Mother," clipped from a women's magazine; one to three pictures of "safe" foods; one or more pictures of liquids or solids "not safe" to eat or drink, and a picture of a baby or toddler. Children may cut out these pictures and paste in appropriate places. On the page containing the caption "So I ask first," the child is directed to draw a picture of himself asking mother or another adult for something to eat. On the front cover, he draws a picture of himself. A paper bag "Medicine cabinet" may be pasted on the page marked, "Lock up unsafe things." Discussion should precede this work. Keep in mind that children cannot discriminate when it comes to grades or conditions of safety. While words, "*Might* not be safe" may be used in discussion, pictures used must be in the "Safe" or "Not Safe" categories.

TO THE DRUG STORE

Purpose and Procedure:

An excursion to the drug store to meet the pharmacist may be profitable. On such a field trip, children often discover that a drug store, although equipped to sell many things, does specialize in medicines. These are stored in the pharmacy, away from other products. The specially-trained pharmacist not only stores medicines, but prepares prescriptions.

The children should be shown that special drugs are kept behind the counter, out of reach so that only an authorized person or pharmacist may touch them. This should graphically illustrate the manner in which medicines should be stored at home -- out of reach, and preferably locked up.

After a visit to a drug store, children may enjoy building a play pharmacy in the schoolroom from blocks or orange crates. The local pharmacist may be able to furnish some empty plastic pill bottles or medicine bottles for the children to use. It is unwise to ask very young children to bring old medicine bottles or boxes from their home since their enthusiasm may impel them to acquire unwashed or partially filled containers. "Pills" can be made from putty, plasticine, or clay, and liquid medicine from water colored with harmless vegetable dyes. Paper labels, such as "Keep Out Of Reach Of Children," can usually be purchased at dime or stationery stores. Labels also may be made by the children on file tab paper. Attaching pre-glued labels to bottles will stimulate an immediate lesson, for the average child will instinctively start to lick the label in order to attach it. A quick "Wait! We don't put anything into our mouths until 'we ask first' " should follow. The teacher may demonstrate how a sponge or brush may be used to attach labels without using tongue or finger. Point out, "It is not likely that glue on the back of such a label will seriously hurt anyone, but it is not a sanitary thing to do. It's best to attach a label or stamp by wetting by some means other than the tongue."

"Prescriptions" may be made by the children from ordinary paper.

A play telephone might be a useful prop in this "Pharmacy," because the children will have observed the telephone as an important tool for the pharmacist.

"THE CONTAINERS SPEAK"

A Puppet Show

Purpose: To provide children with a better understanding of the need for caution in handling household supplies of a potentially poisonous nature.

Procedure: Primary grade children usually enjoy working with hand-puppets or figures mounted on sticks. They are probably familiar with the various television shows for children. These can easily be adapted in developing ideas about poison prevention.

A large cardboard box, mounted on a draped table and furnished with background scenery made from craft paper may be used for the stage. Hand puppets, made by the children from paper mache or stuffed paper bags with faces drawn on them, may be mounted on sticks.

Planning the dramatizations for their puppet show will give children many opportunities to discuss danger spots in the home and to develop an understanding of the importance of poison prevention. After practice, the show may be presented for the benefit of a younger grade.

The following is an idea for a puppet show using boxes, cans, and bottles instead of figures to develop a dramatization about poison prevention:

The teacher provides the class with a collection of clean, empty cans, bottles, and boxes. These may be original containers for household products which are potentially poisonous, or they may be unlabeled containers on which the children may affix such labels as they wish. (Do not ask children to bring such containers to the classroom; in their eagerness they may be careless in their choice of containers.) These containers may then be mounted on sticks; old broom handles are good. The children may plan a puppet play in which containers play the parts of characters and speak to the audience.

Discussion should bring out the fact that many household products of a potentially poisonous nature are actually very useful and make living in the home much easier and more pleasant. It is only when they are not used as intended or directed that they become dangerous.

The theme of the play goes something like this: The containers are trying to find a proper home on a shelf, in a high locked cabinet, or elsewhere, out of reach and out of sight of small children. People just won't put them where they belong and then the containers get blamed for the things that happen when people are careless. They discuss some of their experiences resulting from carelessness. They explain that when used properly, they are really very good fellows. They talk about the directions and warnings printed on their labels. Then they point out places where they might be placed for safekeeping and they as well as the little children in the household, would be so happy!

Another theme might be "The Safe House and the Careless House."

LITTLE BROTHER - LITTLE SISTER

Object of Game: To teach children that small brothers and sisters imitate what they see older brothers and sisters doing. Therefore, pupils must demonstrate safety to the younger members of their family.

Procedure: Adapt words of "Did You Ever See a Lassie?" to "Did You Ever See a Baby?". Practice safety and show that younger brothers and sisters copy by imitating older children.

"WE ASK FIRST"

Object of Game: To show that some things are safe to put in one's mouth, while others may be harmful. We cannot always know. Therefore, before we eat or drink anything, we ask a grownup whether we may do so.

Procedure: A hat box is set on a low table beside an empty wastebasket. On the hat box is pasted a picture of a large mouth, with lips parted, an 8 inch slot cut between the lips. A picture of equal size, of two lips, closed and buttoned (with real or cardboard button) is attached to wastebasket. Under the open mouth "Safe to Eat" is printed; under the closed lips, "Not Safe to Eat."

During work period, children are supplied with pages from magazines which contain illustrations of food, drinks, sprays, and cleaners.

Mimeographed or duplicated drawings of such products may be substituted. Supply blunt scissors with which to cut them out. One child, chosen to play the role of "Mother" or "Father" stands beside the exhibits and chooses another child to begin the game. As each child's turn comes, he stands up and shows the picture he has cut out. He explains his picture and tells why he thinks it is safe to put in his mouth, or why it is not. There may follow some discussion of this. Then he turns to the child chosen to play the mother or father and asks, "Mother, may I eat this?" If "Mother" says, "Yes, it is safe," he slips his picture between the lips on the hat box and sits down. Meanwhile, the remaining children chant the following song to the tune of "Three Blind Mice":

"We ask first,
We ask first
What we may taste,
What we may taste,
Even though goodies look ever so good
We have to remember as wise children should
Not to put anything into out mouths
Till we ask first."

If the answer by the "Mother"is "No, it is not safe for you to eat," the child whose turn it is puts his picture in the wastebasket. If "Mother" has difficulty in deciding, or makes a mistake, the children in the group will usually speak up and correct her; if not, the teacher will supply the correct answer. After each child deposits his picture in either the safe or unsafe depository, the group repeats the song, "We Ask First." At the end of the game the teacher may take materials from each depository and review them:

"This is milk. We decided that we can put this in our mouths because...."

Children: "It is safe to drink."

"This is an apple. We decided that we can put this in our mouths because...."

Children: "It is safe to eat."

"This is a cake of soap. We decided that we couldn't put this in our mouths because...."

Children: "It is not safe to eat."

Alternately, the teacher may line all of the foodstuffs the children have approved for safe eating on a ledge and remark, "We've decided that we may eat all of these things because...."

Children: "They are safe."

Teacher: "Are they always safe?"

Discussion may bring out that someone may have put something other than a soft drink in the pop bottle, or other than milk in the milk carton.

Teacher: "So, what do we do?"

Children chant: "We ask first."

DRAMATIC PLAY --'THE DAY THE BABY GOT SICK"

Purpose: To impress children with the fact that only adults should administer medicine.

Procedure: Teacher reads the story to the pupils. Then they act out the parts. Choose different children to play in each episode. Pantomime may be used without props; however, such simple objects as a toy telephone, bottle, or spoon may be used.

Dennis has a little sister named Prue. One day Prue got sick. Mother took her temperature. Then Mother went to phone the doctor.

The doctor came to see Prue. He said Prue must have some medicine. He wrote out a prescription.

Dennis went with his father to the drug store to have the prescription filled. His father gave the prescription to the pharmacist. The pharmacist read the prescription. Then he mixed the medicine in a dish and poured it into a bottle.

"This medicine is meant for Prue," the druggist said. "It was made just for her to make her well. It is not good for anyone else. It might even make another child sick." "I won't touch it," Dennis promised. "You must never touch any medicine, even if it was mixed for you, unless Mother or Father are with you," the druggist said. Then the druggist put a label on the bottle to tell just how much medicine Prue should take, and when she should take it.

When Dennis and his father reached home, Mother looked at the bottle of medicine very carefully before she opened it. "I must be careful to give Prue just the amount it says on the label," Mother said. "Will you get me a clean teaspoon, Dennis?"

Dennis gave his mother a clean teaspoon. She measured the medicine and gave it to Prue. Prue made a face but she swallowed it because she knew it would make her well.

Mother looked at the clock. "The label says I should give Prue some more medicine in one hour. It is two o'clock now." She held up two fingers. "When will it be time to give Prue her medicine again?" Dennis held up three fingers. "At three o'clock," he said. "I will watch the clock and tell you. May I put the medicine away?" "No," said Mother. "It is good of you to offer,but children should never touch medicine. I will put it in the medicine cabinet where it belongs and lock it up until we need it again." And she did.

At three o'clock, Dennis called Mother and she took the medicine out of the cabinet and gave Prue another spoonful. Just then the telephone rang. Mother heard the phone but didn't pay any attention to it. Instead, she put the medicine in the cabinet and locked it up before answering. "It is most important to put the medicine away before answering the phone," she said. "Dennis, would you answer the phone for me?" Dennis answered the phone, saying, "Mother will come in a minute; she is putting the medicine away." As soon as Prue was well, Mother took her medicine and poured what was left of it into the toilet. Then she flushed the bowl, washed the bottle carefully, and put it in the trash can. "Why did you do that?" asked Dennis. "There was some left. I could have used it if I got sick." "Oh, no," said Mother. "You would have your own medicine if you got sick. It is not safe for one person to take another person's medicine." Then she hugged Dennis. "But we hope you'll never be sick," she said. Dennis hoped so, too.

FINGER PLAYS

Object of Play: To teach children to recognize responsibilities for safeguarding the small and helpless child from danger of ingestion of harmful materials, including poison.

Procedure: Show a picture of a crawling baby examining toys or objects on the floor.

Discuss how a baby crawls around the room playing and exploring, often picking up objects and putting them into his mouth.

Help children recognize that putting objects into their mouths is a normal way for babies to learn, but that we outgrow this habit when we are older and know better.

Discuss how this normal habit can sometimes be harmful to the baby.

Lead children to discuss how they can help protect the baby, and keep him from touching or tasting objects which may be harmful.

Discuss ways children can help make baby's environment safer by keeping harmful things out of baby's reach and sight.

Activity: Children may enjoy learning one or both of the following rhymes, making motions with their fingers to illustrate:

One, two, three, four, five,
Six, seven, eight, nine, ten --
These are the sweet little fingers
That get into trouble when
Baby finds a new plaything
On table, shelf, or floor,
Then puts it quickly in his mouth
And looks around for more.
Ten little curious fingers
Ten little curious toes
Taking our baby to places
He can't wait to explore
We must try to teach baby
Never to touch or taste
Things that he finds around him
On table, shelf, or floor.

JUST SUPPOSE

Purpose: To provide children with a better understanding of the need for caution in handling household supplies of a potentially poisonous nature.

Procedure: Teacher presents "just suppose" stories, such as the following, and then calls on individual children to tell what they would do. As experience with the game develops, understanding increases. Some children may substitute for the teacher in presenting "just suppose" episodes.

Suppose you were playing in your home and you find a box of pills or a bottle of medicine open on the table. What would you do? Tell why.

Suppose you found your baby brother or sister playing with a can of cleaning powder. What would you do? Tell why.

Suppose someone left a bottle of medicine on the table and forgot it. What would you do? Tell why.

Suppose you saw another child accidentally eat or drink something you thought might harm him or make him sick. What would you do? (Always tell parent or teacher.)

Suppose a playmate offered you something to eat or drink, but you were not sure what it was. What would you do?

Suppose you found baby brother or sister chewing on something but he wouldn't open his mouth to let you see what it was, and there was an open box of pills beside him. What would you think? What would you do?

Suppose you were thirsty and you found a soda bottle in the garage where father usually keeps his tools. What would be the best thing to do?

Suppose you and your baby brother saw father or mother painting and he or she put some paint in a cup and left it there. What would you do?